

# Railway Age

Vol. 79, No. 25

December 19, 1925

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## More Light on the Strength of Rivets

**T**HE usual form of rivet for holding together pieces of iron or steel is one with a full head, namely, a button head, in bridge, building and car construction, and a conical head in boiler or tank work. There are cases, however, where the head must be flush with one or both faces of the members connected, requiring the use of countersunk rivets. In ordinary practice such rivets are used only where necessity demands because they have long been considered weaker than rivets with full heads and specifications definitely prescribe smaller strength values for them than for rivets with button or conical heads. That such depreciation of the value of the countersunk rivet has been founded on analytical studies rather than specific test data is indicated by the report of a series of tests of button-head and countersunk rivets made by J. B. Kommers, associate professor of mechanics of the University of Wisconsin. These tests show no particular difference in the strength of the two types of rivets but a lesser rigidity of the countersunk rivets under normal stress and a greater deformation at failure. The general conclusion of the report is that full head rivets should be used in joints requiring maximum rigidity but that countersunk rivets are preferable in joints subjected to impact or collision, because of their greater capacity to absorb the energy of the blow. These tests, together with the conclusions offered, do not suggest any marked departure from present practice as regards bridges and buildings, but they do suggest the possibility of a thorough review of current specifications with a view to determining whether some modifications in the assumed strengths of rivets are justified in the light of these developments.

## The Younger Men

**T**HE Pacific Railway Club is the second organization of this kind this season to devote an entire evening to a program in the interests of the younger men. As in the case of the New York Club, the principal talks were made by the young men. Four of them had never before spoken in public. One of these young men is a freight brakeman, another a division accountant, the third a contracting freight agent, and the remaining two machinist apprentices, one of them having attended the Younger Railroad Men's Conference at Pittsburgh; indeed, he was elected one of the vice-presidents of that conference. This meeting, which is reported as having been extraordinarily successful, is only another indication of the interest that railroad managements are taking in helping the younger men to recognize the importance and dignity of railroad work. The Chesapeake & Ohio management made it a point to follow up the young men who attended a system younger men's conference at Huntington, W. Va., last spring. As a result of the conference and the greater interest which the management and the local officers have since taken in the young

men, most of them are earnestly engaged in studying to prepare themselves for more important positions. It is significant, also, that while the mechanical department has heretofore shown a greater interest in the younger men than have the other departments, because of the apprentice systems for the crafts, emphasis on the part of the railroad clubs and the younger men's conferences is being placed upon all of the boys and young men in the service, regardless of the department in which they are engaged. This should do much to develop the right kind of leadership for the future.

## What Training Should the Engineer Receive?

**A** RAILWAY chief engineer recently decried the reluctance of technical graduates to take positions in the drafting room. There was reason to believe, he said, that the faculties of engineering schools were definitely advising their students against accepting "inside jobs." In the opinion of this engineering officer this attitude is wrong. He believes that there is more opportunity for the development of real engineering ability in the office where the plans are developed than in the field where the plans are carried out. There are those who do not agree with this position, who contend that a man has greater opportunity in the execution than in the design of engineering work because the field work imposes the necessity for the exercise of initiative and resourcefulness and contact with men and will therefore result in the more rapid development of attributes essential for administering the work of others. It would seem that both opinions are partly right and partly wrong. If a man shows no particular aptitude for design or engineering in the sense of an applied science, but manifests the elements of leadership, he will make better progress in a field position where he can be trained for work that is primarily of an administrative character. If, on the other hand, he is proficient in design and in the mathematics of engineering, his greatest opportunity for usefulness is along strictly engineering lines and this, in general, implies office work. However, in justice to the man his work should not be restricted to the office alone for while he will unquestionably be most valuable there, it is common experience that a purely office man acquires a one-sided development which militates against his advancement to the more important positions in his chosen field.

## The New Southern Dividend Rate

**T**HE announcement of the establishment of a dividend rate of 7 per cent on Southern Railway common stock signals one of the most remarkable and interesting phases of American railroad progress—namely, the improved status of the railways in the southern part of this country. The arrival of the Southern Railway

System to its present happy state of prosperity has been a gradual one extending over a long series of years, and can be credited to nothing more important than the new industrial position of the South practically all parts of which—except our new boom state of Florida—are served by lines of the Southern Railway System. Combined with this, the Southern management conserved its resources, built up its facilities and suddenly blossomed, much like a plant, into full flower. The company's preferred dividends date back continuously only to November, 1922. The common dividends at the former rate of 5 per cent were instituted only as recently as May, 1924, no dividends on the common having been paid at all up to this time since the formation of the present corporation in 1894. No less than three years ago Southern Railway common stock was selling at less than \$20 a share, whereas today its price is \$116 a share. What the financial world will never understand is why observers failed to realize the property's gradually improving position and the possibilities that were contained therein. The railroads in the southern part of this country, whether in the Pocahontas, southwestern or southern regions, are today among the most prosperous in the country, which result has been due chiefly to an enormous growth of traffic in recent years. At present, the roads serving Florida are particularly riding on the crest of the traffic wave, and very likely will continue to prosper from the new popularity of that state. It is noteworthy that the Southern has not profited from Florida business in nearly as great degree as have the Seaboard Air Line, the Atlantic Coast Line and, particularly, the Florida East Coast.

### *Why Hide the Locomotive Accessories?*

A CONSIDERABLE number of fuel saving accessories have been developed in recent years for use on steam locomotives, and without them the modern locomotive performance of one drawbar horsepower for the consumption of  $3\frac{1}{2}$  lb. of coal an hour or less would be absolutely impossible. When applied to a locomotive it must be admitted that these accessories give an impression of complication and multiplicity of parts which has caused more than one mechanical officer responsible for maintenance to turn away, shaking his head in doubt. As a matter of fact, the principal reason the locomotive appears to be complicated is that these accessories and the piping are located on the outside of the boiler for ready inspection and repair, where they catch the eye at once. It would be entirely possible to place most of the auxiliary devices between the frames and locate all pipes under the jacket in accordance with the European practice, thus giving the locomotive a much simpler appearance but at the sacrifice of accessibility of parts requiring frequent attention. Steam locomotive development is now progressing as rapidly as at any time since the first locomotive was built, some of the best engineering talent of the country being engaged in this important work, and we may anticipate marked results within the next decade. One of the main objectives of the modern designer aside from consideration of power, economy and reliability, is to produce a locomotive which can be quickly and easily repaired when a defect develops. An excellent example of the study being given to problems of maintenance and enginehouse repairs is afforded by the outside dry pipe and throttle with auxiliary closing valve between the boiler and throttle. This arrangement permits throttle and certain other repairs to be made without knocking

the fire, blowing down the steam pressure and building it up again, operations requiring on an average at least five or six hours. No argument is needed to prove the desirability of having locomotive appliances readily accessible for inspection and repair. If, by being placed on the outside, they give locomotives a superficial appearance of complication, that objection may well be overlooked in view of other attendant advantages of the practice.

### *An Important Valuation Decision*

THE first federal court to pass upon a railroad valuation made by the Interstate Commerce Commission in a case involving the actual merits of the valuation has rendered a decision which will not surprise those who are familiar with the policy which the commission has followed. All the decisions of the Supreme Court of the United States in cases involving valuations of railroads and public utilities have been uniformly to the effect that what must be ascertained is the true present value of the property, and that this must be determined in much the same way as if the property were going to be taken under the power of eminent domain. It long has seemed that in making the valuation of railways upon which it has been engaged for about twelve years, the commission has not been acting in conformity with these decisions. Its findings and opinions have indicated that it has been trying to fix a "rate base", and that it has conceived of this as being something different from the true value of railway property.

We have as yet seen only newspaper reports of the opinion rendered by the United States Court for Southern California in the suit of the Los Angeles & Salt Lake to enjoin the commission from enforcing its order fixing the final valuation of this railroad's property. The newspaper reports show clearly, however, that the court held that the commission had not made a true valuation, and apparently it held that in trying to establish a "rate base" the commission had failed to consider all the factors entering into value. No doubt the case will be appealed to the Supreme Court. In the past the commission repeatedly has secured in the Supreme Court reversals of decisions made by lower courts passing upon its powers and the way in which it has exercised them. In view, however, of the long series of decisions the Supreme Court has made in valuation cases it seems highly improbable that the policy the commission has followed will be upheld when it is presented to the Supreme Court upon its merits.

The problems presented to the commission in its valuation work have been numerous, difficult and gigantic. It has been under great pressure from those on the one side who have tried to get it to adopt principles which would make the valuation as small as possible, and on the other side from those who have tried to get it to adopt principles that would make the valuation as large as possible. No doubt it has intended to be fair, but certainly no railway officer believes it has been fair. Many of its findings and opinions have indicated that it has been trying to make a new kind of "valuation" in the hope that it could get the courts to reverse precedents established in past cases, rather than to make a valuation in strict accordance with the provisions of the law and with past decisions of the courts. Apparently if the Supreme Court upholds such decisions as that recently made in the Los Angeles & Salt Lake case a large part of the money and labor thus far expended on railroad valuations will prove to have been wasted.



## The Value of Surplus Capacity

DEVELOPMENTS within the last two years, and especially within recent months, have emphasized the great value to both the railways and the public of ample railroad capacity. In September the number of tons carried one mile was greater than in any previous 30-day month and in October greater than in any previous 31-day month in history. The net operating income earned by the railways as a whole in these two months was larger than in any preceding two months in history. The service rendered to shippers, excepting in a small area in the southeast, was entirely satisfactory, in spite of the record breaking business. The freight traffic handled throughout this year, measured in ton-miles, has almost, if not quite, equalled the highest previous records and in cars loaded it has exceeded them, and yet throughout the year the service rendered has been unprecedentedly good.

It has been often pointed out that the reasons why the railways recently have been able to give a performance so much better than in earlier years of heavy freight movement have been the co-operation of the shippers with them through the Regional Shippers' Advisory Boards, the better co-operation of the railways themselves under the direction of the Car Service Division, improvements in the operating methods of the individual roads and the great investment of capital that has been made within recent years in enlarged and improved railway facilities. Probably the main cause of the improvement in service, and also one of the main causes of the recent large increases in net operating income, is to be found in the fact that the investment of capital within recent years has been made under conditions and in ways that have resulted in creating surplus railroad capacity.

Passenger business is smaller than it was in 1920. Freight traffic, measured in ton-miles, was about the same in the first ten months of this year as in the corresponding part of 1920, although  $3\frac{1}{2}$  per cent larger in October than in October, 1920. In the four years ending December 31, 1924, the investment in road and equipment of all the railways increased \$2,324,000,000. The increase in the aggregate tractive power of locomotives in these four years was  $9\frac{1}{2}$  per cent and in the aggregate capacity of freight cars 5 per cent. There has been a further increase in property investment this year of perhaps \$850,000,000. The number of new locomotives installed in the first ten months of the year was only 1,492, while the number retired was 2,242. In view of the decline in the number of locomotives it is impossible to say whether there has been a further increase this year in their aggregate capacity. During the same months the number of freight cars installed exceeded the number retired by about 21,000. The investment made this year in permanent additions and betterments has been relatively larger than in equipment, and the total capacity of the railways has been further increased.

The facts given show that while there has not been within the last six years such an increase of traffic as was normal before the war there has been made a large investment in improved and enlarged facilities. This is the reverse of what occurred in the years immediately preceding the war, and during and immediately following it. Then the increase in traffic greatly outstripped the increase in railway capacity. No concern or industry can give satisfactory service to its patrons when it is struggling to meet demands that exceed its capacity. The difference between the freight service rendered in the four years ending with 1920 and that being rendered now is due to various causes, but mainly to the fact that then the traffic offered to the railways as a

whole exceeded their capacity, while now their capacity constantly exceeds the demands of traffic.

The investment in railway properties at the beginning of the present year was about \$1,600,000,000 more than at the beginning of 1923. Computing at the rate of  $5\frac{3}{4}$  per cent, the annual fixed charges on this additional investment would be \$96,000,000. Total operating revenues in the first ten months of the year were \$200,000,000 less than in the corresponding months of 1923, but owing to reductions of operating expenses the net operating income earned was \$108,400,000 greater, and for the entire year may exceed that of 1923 by \$150,000,000. The result will be that, in spite of a reduction of total earnings and an increase in property investment the percentage earned on property investment will be larger than in 1923. To what extent does the investment of new capital which has been made since January 1, 1923, and especially the surplus capacity in which it has resulted, account for the large increases in net operating income which recently have occurred?

The investment of new capital, when wisely made, reduces labor and other operating costs, increases capacity and makes it possible to render service which helps to create favorable public sentiment. What relationship is it desirable to try, by the investment of new capital, to maintain between the demands of traffic and the capacity of a railroad? It is often pointed out that when any part of a railroad's plant is idle the fixed charges on the investment in it go on accumulating and that this excess investment causes a loss, real or apparent. Assuming that a railway is financially able to choose, which it is better for it to do—follow the conservative policy of making the least investment in facilities which it seems reasonable to believe will be sufficient to enable it to handle immediately prospective traffic, or the bolder policy of so enlarging its facilities that it will always be reasonably certain to have some surplus capacity unless there should be an extraordinary and wholly unexpected increase of traffic?

The experience during the last twenty years of individual railways and of the railways as a whole indicates that a policy of boldness in investing capital for the intensive development of equipment and permanent structures proves in the long run to be the wiser policy. If the railway managers had foreseen in 1923 that there would be almost no increase in freight business for two years it is doubtful if they would have made as large capital expenditures in that year as they did. The capital expenditures then made, however, have enabled them to operate with increased economy ever since and undoubtedly are largely responsible for the increase in net operating income that has since been secured without an increase of traffic.

Furthermore, the large capital expenditures then made have largely rendered it possible for the railways to give during the last two years the unprecedentedly good service which has won for them commendation from every business interest in the country. By helping to make improved freight service possible these capital expenditures have contributed toward bringing about enormous reductions in inventories in all lines of business which have released billions of capital the availability of which for other uses is one of the principal causes of the present prosperous condition of the country which is now at last giving the railways an increased freight business.

The railways as a whole have had surplus capacity for two years. The efficient and economical service it has made possible has been directly and indirectly of great benefit to them and of far greater benefit to the business interests of the country. From the standpoint of both the railways and the public it is highly desirable

that, in order that they may continue to give their present good service, the railways shall continue to be so developed that they will at all times in future have adequate capacity, and, except when the peak of each fall's business is reached, a substantial surplus capacity. If this is to be done it will be necessary for railway directors and executives to pursue a bold and optimistic policy in making capital expenditures. Whether, even though they may be disposed to pursue such a policy, they will be able to make sufficiently large capital expenditures will depend very largely upon the way that railway rates and profits are regulated by Congress and the Interstate Commerce Commission.

Surely the argument so often made that regulation that would enable the railways to raise and invest enough capital adequately to increase their facilities would be far more beneficial to the public than to the railways is powerfully supported by the facts regarding the benefits the public has derived from the ability of the railways within recent years to render at all times a good and adequate service.

## A 20 Per Cent Increase in Ton-Miles Per Train Hour

WHILE handling the peak traffic of the last few months the Missouri Pacific increased the average speed of freight trains 22 per cent increased the ton-miles per train hour 20 per cent and reduced the coal consumption over 850 tons a month on a single-track subdivision 56 miles long, between Kansas City, Mo., and Osawatomie, Kan. These remarkable results are ascribed primarily to a revision of passing sidings to provide lap layouts, the installation of remote control switch machines to operate the passing track switches and the introduction of a controlled-manual block-signal system whereby the movements of trains are directed by signal indication, eliminating the use of written train orders.

Briefly, the improvement in train operation can be attributed to a reduction in delays on sidings and a marked reduction in the number of train stops. For example, in one case recently a southbound freight train met five northbound trains by going through passing tracks, and in no case was either train required to stop. This reduction in delays has lowered the time required for the 112-mile trip by 2 hours, and what was previously two 56-mile runs, each paid for at the 100-mile rate, is now a 112-mile turn-around trip.

This division, handling from 12 to 15 through freight trains and 4 or 5 passenger trains each way daily is typical of many busy single track lines. As the traffic grows the peak business is handled with increased delays with attending advances in costs due to overtime with the result that second tracking often appears to be the only solution. On this particular division of the Missouri Pacific it was estimated that a revision of the line and second tracking would involve an expenditure averaging \$60,000 a mile. The revision of the sidings and installation of the signaling cost only a small proportion of this amount, and in view of the fact that the October peak of business was handled with a marked reduction in delays it may be expected that a normal growth of traffic can be moved efficiently over this line for several years without further improvements of any magnitude. A brief description of the new facilities and a comparison of operating results before and after the new equipment was placed in service is contained in an article elsewhere in this issue.

The Missouri Pacific has accomplished the unusual by using signals to eliminate train orders and by the extensive use of remote control switches. The successful operation of the system may be largely attributed to the excellent co-operation of operating officers, dispatchers, levermen and enginemen in adapting themselves to the new operating conditions. In other words, every one works to keep trains moving and no train is stopped merely to instruct it to proceed.

## A Short Catechism on Rate Making

IT is astounding how the arguments against letting the railways charge high enough rates to enable them to earn fair and adequate net returns are changed from year to year and even week to week. If in pre-war and war years when the farmers of the country were highly prosperous the railways had asked for an advance in rates because the farmers were getting more net returns than the railways, their course in basing an argument upon this ground would have been denounced as preposterous by farmers and all who assumed to speak in their behalf. At the present time, however, the main argument being made against an advance in the freight rates of the western railways is that the railways are earning relatively larger net returns than the farmers and that the farmers ought not to be asked to pay higher freight rates while this is the case.

It is easily possible to show by official records what percentages of net return the railways are making. It is impossible to show by similarly authentic data what the farmers are making. Therefore, this argument against higher rates is based upon an assumption which cannot be proved. Besides, the farmers would not directly and indirectly pay more than one-third of the advance which is being asked for.

The most important thing about this argument, however, is that it tacitly proposes the making of freight rates according to entirely new principles. It assumes either, first, that, contrary to the decisions of the courts, the railways are entitled to earn, not a "fair return" upon the value of their properties, but no more in proportion at any time than is being earned by any class of their customers who may be suffering from especial adversity, or, secondly, that their rates should be adjusted in proportion to the needs of their various classes of customers. Both of these theories equally disregard the cost of railway service and "what the traffic will bear." Even the theory of charging "what the traffic will bear" contemplates basing rates upon the relative values of commodities and on competitive conditions, and not upon the relative degrees of prosperity of different classes of producers and shippers.

This new theory of rate-making needs more elucidation by its sponsors before we can know just what it is, how it would be applied and whether it assumes that the prices charged by other industries as well as railway rates should be adjusted in accordance with it.

We are diligent readers of the Des Moines Register and the Des Moines News-Tribune the editor of both of which is Harvey Ingham. We are forced to infer from what these papers have said editorially that their principal objection to an advance in rates in western territory is that above mentioned—namely, that although official statistics show the western railways as a whole are not earning what the Interstate Commerce Commission has held would be a "fair return," rates ought not to be advanced because the



farmers of the west are earning even smaller net returns than are the railways. Mr. Ingham has been for years a frequent commentator on railway matters, and has expressed at length his dissent from almost every proposition that spokesmen of the railways have stated as to the way rates should be regulated and the reasons they have advanced in support of their opinions. We think it is time that he and other eminent public men and newspaper editors who have constantly attacked the views of railway men regarding rate-making should tell the public how they believe rates should be made. We would especially like to know exactly how those who oppose advances in rates on farm products because, as they claim, the farmers are less prosperous than the railways, would apply in the making of freight rates and commodity prices the theory for which they stand.

We therefore, respectfully submit to them the following questions:

Do you believe that if, as is claimed, western farmers are less prosperous than western railways, this is a sufficient reason why freight rates on farm products should not be advanced, or should be reduced, even if it be true that the western railways are not earning a "fair return"?

Do you believe that if western farmers were making more than  $5\frac{3}{4}$  per cent on their investment this would entitle the railways to advance their freight rates on farm products even if the railways already were earning  $5\frac{3}{4}$  per cent on their valuation?

Do you believe that, if freight rates on farm products should be made especially low because, as is claimed, the farmers are not as prosperous as the railways, the rates on commodities shipped by other industries and concerns that are more prosperous than the railways should be advanced because they are more prosperous?

Would you apply the same rule to other industries as to agriculture? For example, if the automobile industry became depressed and agriculture became prosperous would you, for this reason, reduce the rates on automobiles, and would you at the same time advance them on farm products?

Do you believe that, if the farmers are less prosperous than other classes of persons, those who sell clothing, groceries, coal, lumber, automobiles, newspapers, etc., should sell the farmers these things at relatively lower prices than they charge other classes of their customers?

If, as your utterances imply, you believe the railways are not entitled at present to earn any larger net returns than the farmers, do you also believe that other persons and concerns with whom the farmers do business are not entitled to earn any larger net returns than the farmers?

Or, finally, do you believe the fact that the railways render a "public service" and are subject to regulation is a sufficient reason why their rates should be adjusted according to the supposed needs of their different classes of patrons, and largely regardless of the expenses incurred by the railways in serving these different classes, while no other business concern or class of business concerns, either voluntarily or under governmental compulsion, makes its charges or prices according to the supposed needs of its different classes of customers?

It would enlighten us to receive direct and definite answers to these questions from anybody who contends that the rates of western railways should not be advanced mainly or merely because, as is claimed, the farmers are not relatively as prosperous as the railways. We especially invite and urge Mr. Ingham to answer them in the columns of his newspapers. The *Railway Age* on several occasions has tried to answer questions raised by him and in a spirit of fraternal reciprocity he should now answer some for us.

## Books and Articles of Special Interest to Railroads

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books and Pamphlets

*Bulletin No. 10, Railway and Locomotive Historical Society.* Includes articles on early motive-power of the Baltimore & Ohio, the Long Island, and the Birmingham & Gloucester railroads, and on locomotives constructed by Norris Locomotive Works. 58 p. Published by the Society, Brookline, Mass.

*Compendium of R. A. O. A. Arbitration and Appeal Cases, Vol. I,* edited by E. R. Woodson. Covers cases from 1919-1925. 717 p. Published by Railway Accounting Officers Association, Washington, D. C. \$3.00.

*Statistical Summary of the Railway Year, 1925,* compiled by Committee on Public Relations, Eastern Railroads, as supplement to accompany Railroad Data, December 11, 1925. 2 p. Published by the Committee on Public Relations, Eastern Railroads, New York.

*The Union Pacific System,* by Wood, Struthers & Co. Reviews record as transportation system and surveys sources of outside income. 70 p. Published by Wood, Struthers & Co., New York City.

*Abbeys,* by M. R. James. History of English abbeys, together with map showing abbeys, cathedrals and castles in territory of Great Western Railway. Illustrated. 153 p. Pub. by Great Western Railway Co., London. 5 shillings.

### Periodical Articles

*Are You Making Full Use of Car Loading Reports? They Tell Much to the One Who Reads Them Carefully and Intelligently.* Shipper & Carrier, December, 1925, p. 17-18.

*Here's the "Never-Stop" Railway.* Illustrated description of the railway system installed at British Empire Exhibition at Wembley in 1923 and still in operation. Aera, December, 1925, p. 924-931.

*The Horse Outlook,* by Wayne Dinsmore. Present and future demands for draft types, illustrated by types found satisfactory or unsatisfactory by the American Railway Express and other concerns using draft horses. The service records of this "equipment" may be especially interesting. 24th Biennial Report, Kansas State Board of Agriculture [v. 29] p. 153-159.

*American Corporations and Their Executives: A Statistical Inquiry,* by Prof. F. W. Taussig and W. S. Barker. Quarterly Journal of Economics, November, 1925, p. 1-51.

*Germany Takes to the Air,* by Louis Fischer. Describes service on "longest passenger and freight air line in the world" from Königsberg to Moscow. Independent, Nov. 28, 1925, p. 604-606.

*Scientifically Developed Shipping Containers,* by C. M. Bonnell, Jr. Discusses yearly cost of packing and shipping, work of the Freight Container Bureau, A.R.A., standardization of lumber for containers, tests, etc. Mechanical Engineering, Mid-November, 1925, p. 979-983.

*"Wes" Sargent's Boy,* by Neil M. Clark. A biographical sketch of F. W. Sargent, President of the Chicago & Northwestern. American Magazine, December, 1925, p. 16-17, 202, 204.

*A Study of Equipment Trusts,* by Harlan H. Newell. History of this type of security and investment possibilities. Savings Bank Journal, December, 1925, p. 38-41.

## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

### Help the Engineman to Find the Signal

PHILADELPHIA, PA.

TO THE EDITOR:

The people of New Jersey—and the rest of us—and especially the railroad men of America, are to be congratulated on a grand jury (of 22 men and one woman) who had the courage to acquit Engineman Carroll of manslaughter. Carroll's lapse at Monmouth Junction was an awful and tragic blunder; but how can you call it a crime? Society, or the state, has a solemn duty to do everything possible to educate engineers out of those habits of mind which impair their vigilance, but putting them in jail is a very doubtful means of doing this. Of all engineers who make fatal blunders, a very considerable portion are men of good moral character, and well-liked by their fellow employees and their superior officers. The legislature would never make laws to put such men in prison, for this kind of fault, if the legislators knew how to devise any other punishment. The root trouble is that no one has found a way to frame a suitable remedy for this thing, to be applied after the event. The only remedy is training.

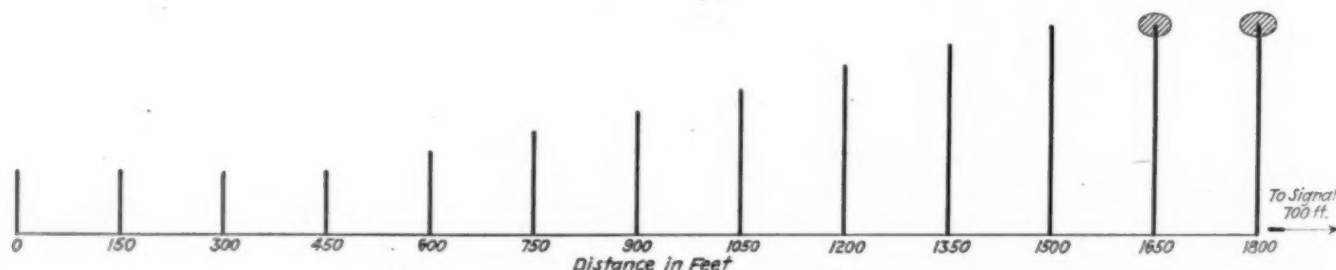
While all engineers and trainmen will join me in sympathizing with this man of long experience and good rec-

duced one-half or more if cab signals were used instead.

It is very irritating to the interested observer, detached from everyday railroad and governmental activities, to see the futile fumbling of the railroads and the government in this problem of safeguarding passenger travel on American railroads. It looks as though the \$7,000,000 of the Pennsylvania's money (and \$5,000,000 of the New York Central's and uncounted millions elsewhere) were being blindly expended in a quest for some undefined or hazy ideal of safety, dimly formed in the minds of eleven commissioners, no one of whom is an engineer; and the railroads acquiesce because they have no well-defined policy of their own.

It may be that the railroads and the government can show more or less reason or excuse for their vacillating courses in trying to decide as between the costly automatic brake apparatus and some less complete protection; they have been years at it, and it cannot be that all of the so-called obstacles are imaginary; but this does not wholly explain the clouds that cover the sky. Some very simple safeguards have been neglected.

The railways of Belgium, birthplace of the International Railway Congress, have for years afforded us a lesson in signal observation which we persistently neglect: the use of white fences at the side of the track. These have been described in the Bulletin of the International Railway Congress. A suitable row of white posts will deprive the dullest engineman of any excuse for missing a signal. Why do we overlook this simple device? Imagine yourself a runner on the line approaching Monmouth Junction, if it were properly equipped: blocks 5,000 ft. long; after passing the last clear signal you run 2,500 ft. with no special landmark; then you encounter a white post, three feet high, set close to the track; then you run 150 ft. further and encounter another post; 150 ft. more and a third, and so on. The fifth post is four feet high; the sixth, five feet; the seventh, eight feet and so on; and the eleventh post is 10 ft. high. The 12th has a 12 in. oval board at the top and the 13th an 18 in. oval; then you



Arrangement of Artificial Landmarks for Approach to Wayside Signal

ord who at this time must be laboring under a load of remorse, I am writing you, not mainly on account of Carroll, but *pro bono publico*. The pity of the matter is that the error which killed a half-score of innocent people on that express train is so easily preventable. Chief signal engineer Rudd, of the Pennsylvania Railroad, a man of high reputation and long experience, has named the remedy—the cab signal. (See his address in your issue of November 28.) It is not necessary for me to elaborate on that theme. The readers of the *Railway Age* know what a cab signal is. And Mr. Rudd is not the only prominent railroad officer who advocates the cab signal. Does any one doubt that a simple audible cab signal would have saved Engineer Carroll from the awful distress of mind that he has suffered for the last three weeks? The seven-million-dollar expenditure which Mr. Rudd's railroad is going to make for automatic train stops could be

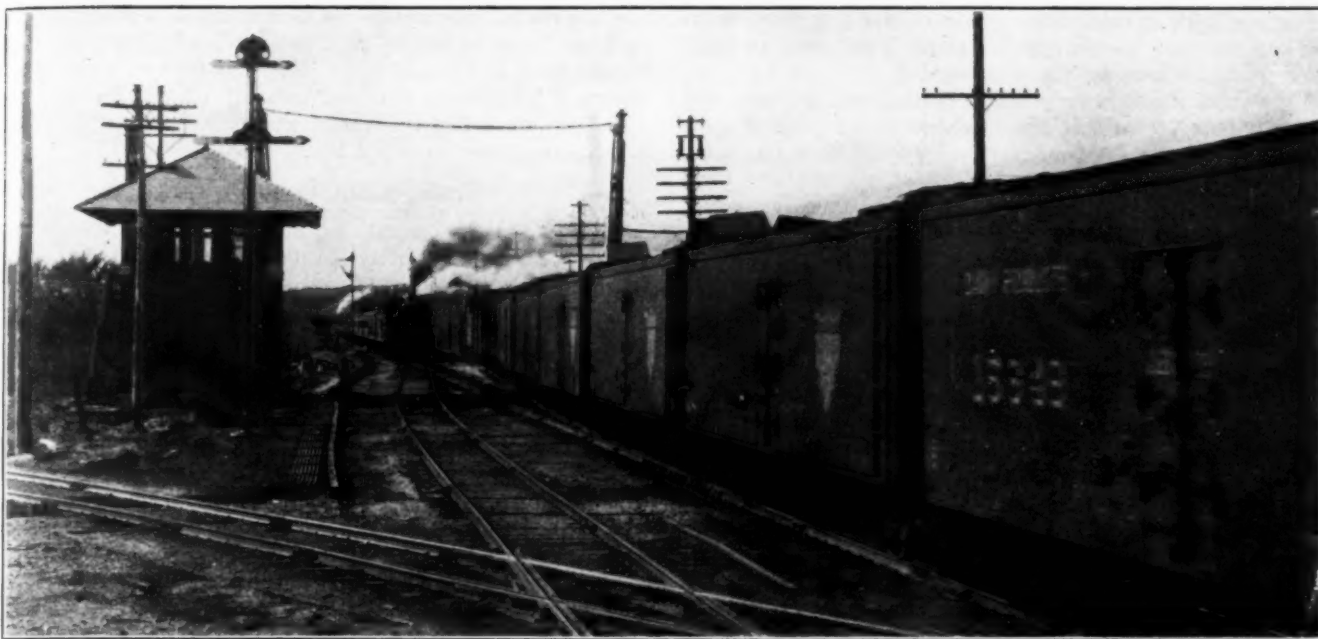
are within 700 ft. of the signal. And if your eyes and other faculties are half way efficient you must by that time be awake to your duty.

Are we neglecting this very useful adjunct simply because it originated in Europe and is cheap? Mr. Weissenbruch, the late secretary of the International Railway Congress, gave it to the world long before the war.

COLUMBIA.

THE NEW LOCOMOTIVE REPAIR SHOPS of the Mobile & Ohio at Jackson, Tennessee, known as the "Iselin Shops," were formally opened by Fairfax Harrison, president, and E. E. Norris, vice-president of the road, on December 1, 1925. These shops were built by Dwight P. Robinson & Company and consist of a main locomotive repair shop of the transverse type, having fifteen pits; a storehouse and office building; and, in addition, a wheel shop and a power house.



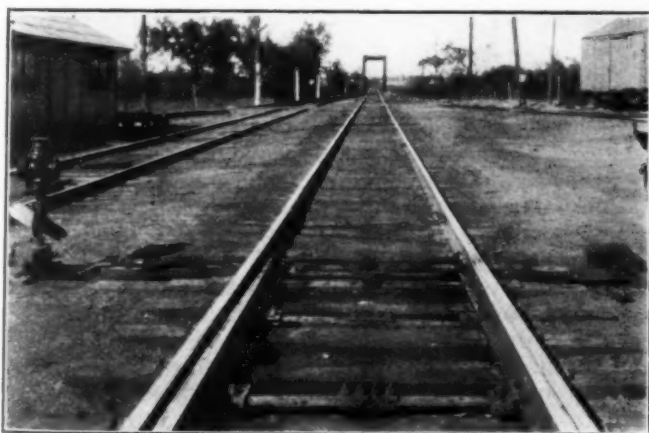


Two Trains Meeting on the Lap at Dodson Without Stopping

## Missouri Pacific Reduces Time of 112-Mile Trip Two Hours

*Average speed increased 2.22 m.p.h. by revision of sidings, remote control switches and elimination of train orders*

A 22.6 per cent increase in the average speed of freight trains, a 20 per cent increase in ton-miles per train hour and a reduction of over 850 tons in coal consumption for a month have been accomplished during the last year on the 56-mile subdivision of the



A Spring Switch with a Buffer Is Used at the End of Double Track at Osawatomie

Missouri Pacific between Kansas City, Mo., and Osawatomie, Kan. The average speed over the 112 miles including stops, has been increased from 9.81 miles an hour to 12.03 miles an hour. This includes 3 hours 30 minutes average for the turn-around at Kansas City. These results

have been accomplished by relocating passing tracks and adding lap sidings at other points, in addition to the installation of a unique controlled-manual block signal system by which trains are now operated by signal indication without written train orders. In compliance with the orders of the Interstate Commerce Commission and to serve as an additional safety factor, train control of the intermittent inductive type of the National Safety Appliance Company was installed on this division. These changes were carried out in accordance with a plan developed in an extensive study of traffic and, in consequence, the operation of trains with the new facilities in service is so successful that delays at meeting points have been reduced materially and train stops for train orders eliminated to such an extent that trains now make the turn around trip in about two hours less time than formerly, while the coal consumption was reduced about 896 tons for the month of September, 1925, as compared with September of last year. The coal consumption for October, 1925, was 174 lb. per 1,000 gross ton-miles, as compared with 197 lb. per 1,000 gross ton-miles in October, 1924.

### Territory Involved and Traffic Handled

The 56 miles of line between Kansas City and Osawatomie is known as the Kansas City district of the Central Kansas division. The section from Kansas City, Mo., to Leeds, 5.9 miles, is double track, while the remaining 50.1 miles to Osawatomie, Kan., is single track. The line is characterized by a rolling grade line and heavy

curvature with a maximum grade of 1.4 per cent from Osawatomie east to Wagstaff and of 1 per cent in each direction elsewhere on the district.

This subdivision is in effect a bottle neck between the Kansas City terminal and Osawatomie, where lines diverge to the west and south. In addition to four scheduled passenger trains each way daily, and one local freight each way daily excepting Sunday, there are from 10 to 13 through freight trains in each direction every 24 hours. Mikado locomotives with a draw-bar pull of approximately 70,000 lb. are used in through service, hauling about 4,600 tons maximum tonnage up a 1.4 per cent grade eastbound out of Osawatomie for 15 miles to Wagstaff with a helper for trains of over 2,520 tons. The rating westbound is limited to 2,520 tons on account of a 1 per cent grade with reverse curves on the Stilwell hill.

The traffic on this district ranges from 1,100 to 1,300 thousand gross ton-miles per day, the maximum for a single month being 76,846,207 gross ton-miles in October, 1924. The preponderance of traffic is eastbound during the season of heavy traffic and includes mostly wheat and livestock with a considerable amount of western fruit and vegetables under refrigeration. The westbound traffic consists primarily of manufactured products.

The traffic on the division, of which this district is a subdivision, has been increasing gradually for the last eight years. From 1919 to 1922 the increased difficulty of getting trains over the line led to delays approaching congestion and resulted in extremely high operating costs, necessitating relief in some form as soon as practicable. On account of the rough character of the country traversed and the numerous sharp curves the cost of straightening the line and adding a second track was estimated at \$60,000 per mile. Starting in 1919 intensive studies were made of ways of accelerating the movement of freight trains to enable a larger number of trains to be handled in 24 hours and increase the ton-miles per train hour for the average train.

A summary of these studies, compiled in 1923, shows that the gross ton-miles per train hour for an average train was 17,991.6 westbound; 21,480 eastbound, and including a turn around delay at Kansas City of 2 hr. 50 min., 15,498 gross ton-miles per train hour for the round trip. The average direct expense per 1,000 gross ton-miles was \$0.969 westward; \$0.70 eastward, and \$0.814 for the round trip. These results were obtained from a study of 318 westbound and 318 eastbound typical through freight trains operated during October, 1923. A similar study was then made of freight train operation in October, 1919, and the following comparative data compiled

COMPARISON OF OPERATION 1919—1923

		1919	1923
Number of trains making up the average time was.....	Westward	221	318
	Eastward	216	295
The average total time for the trip was .....	Westward	5 hr. 5 min.	4 hr. 48 min.
	Eastward	8 hr. 9 min.	8 hr. 25 min.
On the eastward turn trip the delay of East Bottoms (Kansas City Yard) was.....		3 hr. 30 min.	2 hr. 52 min.
The delay in road sidings was .....	Westward	53 min.	82 min.
	Eastward	33 min.	96 min.
The delay in entering Osawatomie Yard.....		10 min.	8 min.

A recapitulation of this data shows that the time for turning at Kansas City had been reduced 38 minutes between 1919 and 1923, but that the delays on road sidings for the trip had increased from 1 hour 26 minutes to 2 hours 58 minutes. It was, therefore, evident that the most logical way to produce greater capacity and better performance was to reduce these road delays. In Chart I the full line shows the delays of the average train of 1923

and the dotted line shows the movement of a train at 12.5 an hour "time called to time tied up," allowing one hour for the turn at Kansas City. Representative checks made during 1925 proved that the ideal of 12.5 miles an hour was even exceeded as shown in the lower diagram and also as explained in detail later.

### Traffic Conditions in 1923

In 1923 the longest running time for westbound freight trains between telegraph offices was 57 minutes, between Martin City and Stilwell; and the shortest was 18 minutes between Bucyrus and Wagstaff. For the eastbound trip the longest running time for freight trains between telegraph offices was 59 minutes on the double track from Leeds to Kansas City (East Yard) and 39 minutes on the single track from Stilwell to Martin City,



The Switches at the Lap Are Operated by a Mechanical Interlocking Which Includes the Control of the Signals

while the shortest running time between telegraph offices eastward was 14 minutes from Bucyrus to Stilwell.

The longest average delay at telegraph offices for westbound through freight trains was 12 minutes each at Leeds and at Paola; and for eastbound trains 7 minutes each at Bucyrus and Stilwell. The shortest average delay for westbound trains was 3 minutes at Stilwell and for eastbound trains was 3 minutes at Dodson and at Martin City. The first problem was to reduce the longest delays.

The second longest running times were, westbound, 45 minutes from Paola to Osawatomie, and eastbound, 36 minutes from Paola to Wagstaff, and 35 minutes from Osawatomie to Paola. The delays second in order of size were 8 minutes westward at Wagstaff and 7 minutes at Bucyrus, and eastbound, 5 minutes at Paola. With a meeting point at Stilwell between trains with a succession of meets, station by station, a train which moved from Bucyrus eastward to Stilwell in 14 minutes must await there the arrival of the westward train leaving Martin City at the same time and consuming 57 minutes in running to Stilwell.

The minimum number of trains required to move the tonnage offered was determined. Assuming that the required spacing between following trains throughout the 24-hour day was 60 minutes, due allowance had to be made to permit skipping certain of these hourly periods to avoid interference by passenger trains, for if a train was held at sidings one hour awaiting passenger trains, the same arriving time at the end of the trip would be made as if the freight train had left the terminal one hour later. Fixing the number of trains each way required to move the business in a 24-hour period also fixed the separation by the time interval of the sidings. With this



time interval fixed, the next step was to make such an adjustment of the existing siding spacings as would create the least idle time for the trains at the stations.

Betterment of train performance on this division has resulted in part from an extensive study to ascertain the proper time of departure of through freight trains from terminals to encounter the least delay on the road. In this study no importance was attached to the operation of trains for any particular day, but rather the average movements of several trains dispatched in each half hourly period for a month or six weeks were considered. The results of this study, with the explanation of the system of charts used were incorporated in a paper by B. H. Mann, signal engineer of the Missouri Pacific,



The Switches at the Distant Ends of Passing Track Are Operated by Remote Control Switch Machines

before the convention of the American Association of Railroad Superintendents in June, which was published in *Railway Signaling* for August, 1925. A complete chart outlining graphically the movement of the average train in each direction indicated the rearrangement of existing sidings required to keep the running time of the trains between telegraph offices and sidings below the upper limit.

#### How the Results Were Accomplished

At Kenneth, an intermediate station between Martin City and Dodson, where the worst delay existed the running time of 57 minutes was reduced by a rearrangement of the water station so that it served the siding as well as the main track. A telegraph office was transferred from Martin City, the latter becoming a non-telegraph intermediate siding. An interlocking plant was also built at the crossing of a foreign railroad at this point which included the inner switches of the lap siding while the outer switches are handled by the tower operator by means of electric remote control. One siding of the lap was lengthened to hold 100 cars clear of the interlocking limits and the lap siding turnouts were changed from No. 10 to No. 20 turnouts.

The meeting and passing point diagram also showed the need of a siding between Kenneth and Stilwell. The grade conditions at Stilwell and the existence of an important highway crossing which could not be blocked prevented the conversion of a single siding to a lap siding. The 1,200 ft. of this siding west of the highway crossing was, therefore, cut off and the siding was extended east to hold 100 cars. The switches at each end of the Stilwell siding were handled by the telegraph operator through remote control switch mechanisms.

The next problem was to reduce the running time when

necessary between Stilwell and Kenneth. An existing slackening of the westward gradient at mile post 304.5, intermediate between Stilwell and Kenneth allowed the location of a 100-car siding on which tonnage trains could stop and start. The excessive time between Leeds and Kansas City (East Yard) was due to delay in taking trains into this yard upon arrival and has been corrected by yard improvements.

The second longest running time between Paola and Osawatimie, 45 minutes westward and 36 minutes eastward, was corrected by establishing a lap siding and office at the top of the John Brown hill intermediate between Paola and Osawatimie. The siding extending east from John Brown office connects with the existing siding at Adair, making a continuous running track from John Brown to the west tower at Paola while the lap west from John Brown stops at a steel bridge some distance outside of Osawatimie. The time interval needed for train movements through the remaining section of single track into Osawatimie fits well into the required traffic capacity. The switch at the west end of the lap is handled by the John Brown operator.

#### Controlled Manual Block Signaling

##### Installed to Eliminate Written Train Orders

The division telegraph office at Osawatimie was already overloaded as were also the existing yard facilities to such

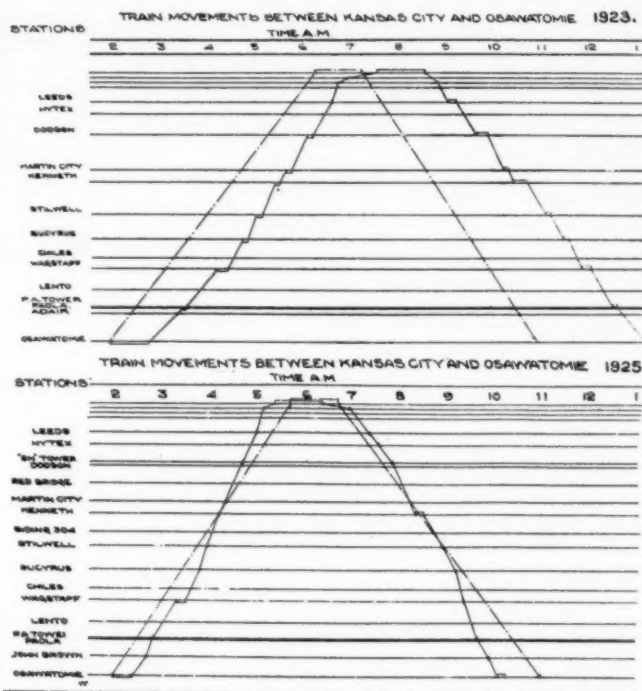


Chart I—Time Distance Diagram of Composite Average Freight Train Movements. Full Line Shows Actual Average and Dot-Dash Line 12.5 M.P.H. Ideal

an extent that provision had to be made to keep the yard open by a free movement at entrance and exit, which condition justified a new office. The switch at the east end of the double track in the Osawatimie yard is spring-connected to a hand-throw stand and is provided with an oil cylinder shock absorber to prevent excessive wear and tear of the connections and damage to the electric circuit controller which provides a proper display of signals to indicate the clear route. Trains trail through this switch without stopping, even though the points are set the wrong way.

In addition to the changes in passing track facilities

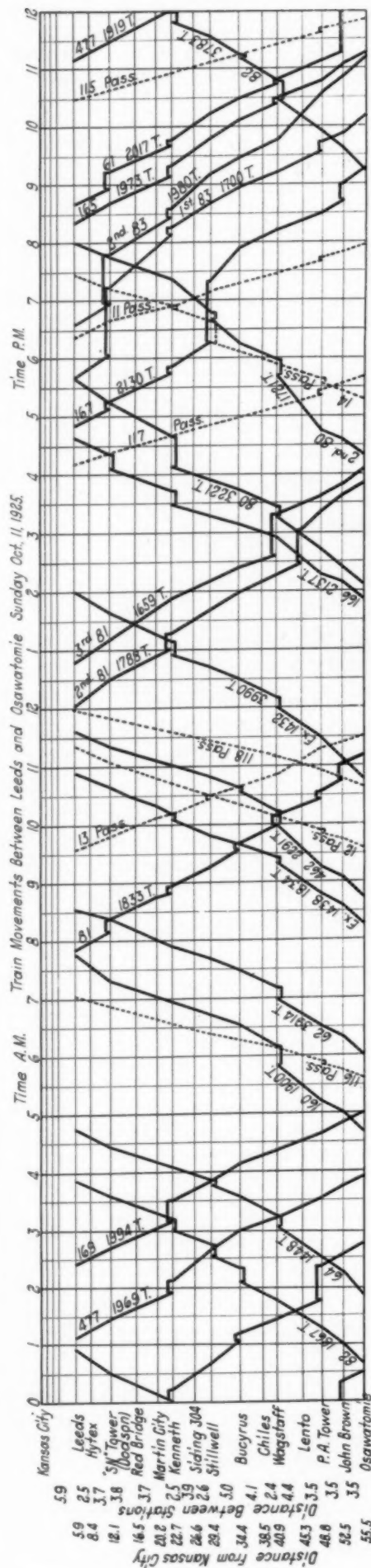
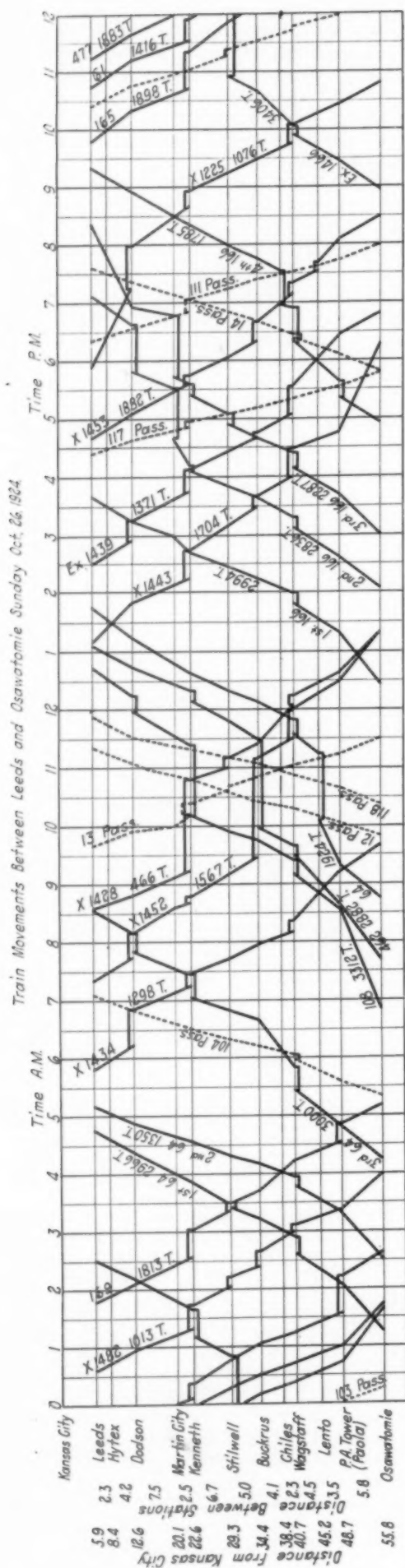


Chart II.—Time-Distance Diagrams, Showing Freight Train Operation on October 26, 1924, Compared with October 11, 1925





measures were taken to eliminate train stops previously occasioned by picking up train orders. The controlled-manual block system was superimposed upon the previously existing manual telephone block without any increase in the number of manual block offices, except at Osawatomie where relief was required for the division telegraph office, as explained previously. There are now seven telegraph stations intermediate between the ends of double track at Leeds and Osawatomie. Lap sidings, with each side of the lap holding 100 cars or more, are now located at five of these telegraph offices. At the two remaining offices single sidings are installed on account of grade conditions and the necessity of being able to stop and start a tonnage train.

Single intermediate blind sidings are located in five of the spaces between the telegraph offices. In one instance there are two such sidings and in another a non-telegraph interlocked crossing marks the end of a second track each



Train on Main Track Passing Home Interlocking Signal Approaching Lap Siding. Note Train-Stop Magnet on Siding with Directional Control Device Alongside the Rail

way which extends to the next telegraph office and, therefore, leaves a length of single track in the block of only the length of these interlocking limits. The operators at the telegraph offices handle the switches at the near end through mechanical levers and operate the distant ends electrically through remote control mechanisms. Number 20 frogs at the turnouts permit train speeds of 30 miles an hour when entering or leaving the interlocked or remote control sidings.

Each train order signal is locked electrically, being controlled by the operator at that station in co-operation with the operator at the distant end of the block and also by a train in the block. The train order signal is the two-position type (horizontal to vertical), controlled from telegraph station to telegraph station, and is displayed to the crew on both the front and the rear of a train. The indication for the movement of a train into the block is given by semi-automatic block signals which are controlled

by track circuits and located near the far ends of the sidings, as shown on the track and signal plan. The caution position is used as an approach indication for the signal next ahead.

A telephone circuit is provided from station to station sidings and also to intermediate sidings; the latter may also be connected to the dispatcher's telephone circuit for the entire subdivision. The communicating code numbers of the standard train rules for forwarding a train may be exchanged by the operators, either through the telephone magneto bells or by the designated code words over the telephone.

Indicators in front of the operator show whether the block is clear (a) through his station limits; (b) to the intermediate blind siding; (c) between the intermediate siding switches, and (d) between the intermediate siding and the next telegraph office. Indications also show when each block signal changes and the remote control switch points move. A bell rings to announce the approach of a train to the telegraph station.

### Operation of the Signal System

The movement of trains is supervised by the train dispatcher and handled by the block operators through signal indications. No written train orders are issued and timetable superiority of trains is abolished. The time-table shows only the time of departure and arrival at terminals. To move a train into a block the operator calls the operator at the next station and the signal is cleared through his co-operation. All intermediate signals at the blind sidings govern toward the operator who controls them so as to bring the train toward the operator who protects against opposing trains. While the train occupies any section of the space between two telegraph stations each of these operators is informed automatically of its location and conflicting signals are held at stop automatically.

If it should be desired to direct an approaching train to enter a blind intermediate siding the signal at the siding entrance is held at stop. The train crew then communicates with the block operator by telephone at the switch and, as a rule, when so directed, operates the switch by hand. If this signal should be against the train on account of the opposing train heading in at the other end of the siding the first train can be given the facts by telephone and then wait for its signal to clear.

A train on an intermediate blind siding calls the block operator by telephone as soon as the opposing train appears, and upon receipt of a favorable response, opens the switch after the other train has passed, and proceeds when the block signal at the clearance point on the siding clears. Two acts are required for every movement into a block as, for example, two signal indications or one signal indication and a supplementary communication with the operator, or a signal indication and a caution card.

The trains enter the lap sidings at the inner end, as a rule, but may enter at either end as both ends are handled by the block operator. The changing of either of the two adjacent lap switches forces the changing of the other so that a double track parallel movement is provided for safety.

If one train has had time to get "in to clear," by the time an opposing train arrives, the first mentioned train is given the main line. If the trains arrive so closely together as to require it, both trains are diverted into their respective sidings. The accuracy of the spacing for the single track sidings is such that trains frequently arrive at the meeting points so nearly simultaneously that neither train is required to stop at the meeting point to await the opposing train, but both keep moving through the sidings. On one westbound trip a through freight

train went through five sidings in meeting eastbound trains and in no case was either train required to stop.

The intermittent inductive train control system of the National Safety Appliance Company, which was installed as an additional safety protection, is superimposed upon the controlled-manual block system. A magnet at stopping distance from an obstruction comes into action if an attempt should be made to disobey a stop signal. A second magnet comes into action if an attempt should be made to pass a caution signal at a speed greater than 25 miles an hour. A "key by," operated on the ground at a point several feet from the track magnet, forestalls the action, when desired, during switching or other emergency low speed movements.

The design of the circuits and an explanation of the apparatus used on this installation were included in an article published in the *Railway Age* of November 8, 1924, page 843.

### Train Operation in Comparative Months

Ordinarily railroads make a number of improvements at one time to increase track capacity and it is, therefore, difficult to determine savings from any particular new facilities. However, in this case the same power, the same main tracks, the same water stations and the same yards were used in 1924 as in 1925. Therefore, by comparing the records for train operation the benefits derived from the new arrangements of sidings, remote control switches and the elimination of train orders can be shown quite definitely.

The average time spent on the road by through freight trains moving in each direction during recent months is 2 hours 38 minutes, as compared with about 4 hours in 1923. During 1923 and up to January, 1925, the trains were operated as a straight run in each direction, the crews being paid 100 miles for each run of 56 miles. By

OCTOBER 26, 1924						OCTOBER 11, 1925					
Train Number	Tonnage	Time from Leads to Osawatomie		Delays		Train Number	Tonnage	Time from Leads to Osawatomie		Delays	
		Hr.	Min.	Number of Delays	Minutes			Hr.	Min.	Number of Delays	Minutes
X 1402	1,015	5	34	4	60	477	1,009	2	48	1	12
100	1,015	3	08	3	55	100	1,004	2	38	1	20
X 1434	1,208	3	50	3	60	81	1,633	3	10	6	59
X 1452	1,507	0	0	4	163	2nd 81	1,708	3	45	2	50
X 1450	406	4	44	3	114	3rd 81	1,659	3	18	1	42
X 1443	1,704	3	10	3	70	107	2,180	4	23	4	94
X 1439	1,371	4	20	4	77	1st 83	1,700	4	32	3	65
X 1453	1,080	3	50	4	46	2nd 83	1,600	4	36	2	62
X 1255	1,076	4	09	3	63	165	1,073	3	0	2	15
105	1,098	3	53	1	30	61	2,017	3	52	4	91
61	1,438	3	0	1	28	477	1,919	3	39	3	68
477	1,002	3	25	3	82						
	17,506	44	35	35	945		21,012	34	339	20	284
Average	1,440	4	10				1,910	3	34		

reducing the delays on the road it was decided that the trains could be operated as turn-arounds, starting at Osawatomie. If a crew completes the round trip in less than 9 hours 42 minutes there is a decided saving in wages as compared with two separate 100-mile runs, and records show that 60 per cent of the runs are completed in less than this time.

Contrast between the results of train operation before and after the improvements were made is readily apparent from a study of the summary of operating statistics for October, 1924, as compared with October, 1925, as given in the table of statement of performance of through freight trains on the Kansas City district.

As shown in the table the train miles per hour were

increased from 9.81 in October, 1924, to 12.03 in October, 1925, which includes the time elapsed from departure from Osawatomie to the return to that point, the average time required to turn in Kansas City being 3 hours 30 minutes for October, 1924, as well as for Oc-

### STATEMENT OF PERFORMANCE

Items	October 1925	October 1924	Increase or Decrease	Per Cent
Gross tons handled one mile....	68,721,704	76,846,207	48,124,503	410.6
Trains run .....	663	728	465	48.9
Train hours .....	3,072	4,154	41,082	426.0
Train miles an hour .....	12.03	9.81	2.22	22.6
Gross ton miles per train hour...	22,370	18,499	3,871	20.9
Train miles run .....	36,944	40,768	43,824	49.4
Gross tons per train mile:				
All trains .....	1,860	1,885	425	41.3
All trains in direction of heavy traffic .....	2,190	2,280	490	43.9
Direction of traffic—Through freight .....	2,318	2,338	420	40.9

tober, 1925. The increased efficiency resulting from the changes is also evidenced by the increase of 3,871 gross ton-miles per train hour for October, 1925, over the same month of 1924.

### Train Operation on Comparative Days

To show in detail how the facilities completed during the last year have reduced delays, all train operations on

OCTOBER 26, 1924						OCTOBER 11, 1925					
Train Number	Tonnage	Time from Osawatomie to Leads		Delays		Train Number	Tonnage	Time from Osawatomie to Leads		Delays	
		Hr.	Min.	Number of Delays	Minutes			Hr.	Min.	Number of Delays	Minutes
1st 64	2,958	3	32	2	20	80	1,897	2	8	3	38
2nd 64	1,350	2	42	1	11	64	1,448	2	51	2	15
3rd 64	3,000	4	22	3	65	160	1,900	3	15	1	19
100	3,312	5	54	3	121	62	3,914	2	30	1	10
405	2,863	5	26	3	118	1450	1,834	2	36	1	12
62	1,984	5	1	2	84	462	2,391	2	9	2	16
1st 166	2,994	3	14	1	11	1432	3,090	3	12	2	25
2nd 166	2,856	5	2	4	115	168	2,137	2	47	2	51
3rd 166	2,307	3	21	4	101	60	3,821	3	34	2	42
4th 166	1,788	4	26	3	84	2nd 80	1,721	3	48	2	25
1494	3,400	5	37	3	124	62	3,763	3	42	2	38
	28,758	48	277	29	880		26,106	27	332	20	263
Average	2,805	4	34				2,555	2	54		

Sunday, October 26, 1924, and Sunday, October 11, 1925, were plotted on time-distance charts. These two days were selected as being as nearly comparable as could be found in the train sheets with reference to gross ton-miles and number of trains in each direction. Eleven through freights were operated in each direction in 1925 and westbound in 1924, while 12 were run eastbound in the earlier year. This year a total of 2,770,055 gross ton-miles was handled in 86.27 train hours, or 32,109 ton-miles per train hour, which is a marked increase over the figures for October 26, 1924, when 2,556,553 gross ton-miles were handled in 119.36 train hours, or 21,419 ton-miles per train hour. The same locomotives are being used in 1925 as were used in 1924, and the tonnage per train was practically equal on the days selected.

The meeting of trains, as shown by the crossing of the train lines on the station lines on the accompanying chart is interesting in that the operation in 1925 permitted closer meets with minimum delays and in many cases without even a train stop. A glance at the chart will show that the delays on sidings, as shown by the small rectangles on the station lines, are much longer for the trains operated on the 1924 date than for the 1925 date.

Taking the period between 9 a.m. and 12 p.m. on October 11, 1925, as representative for purposes of com-



parison, there were one westbound and two eastbound passenger trains and one westbound and three eastbound through freights on this district at the same time with only slight delays because of the close meetings. A study of the same period of the day on October 26, 1924, shows two westbound and three eastbound freights with numerous station delays.

The total delays for all freight trains on sidings between Leeds and Osawatomie for the day in October, 1924, totaled 1,723 minutes, as compared with 847 minutes on the day in October, 1925, or a difference of 14 hours 36 minutes, which is, in fact, not the entire saving, for previous to the use of remote control switches time lost in stopping to enter sidings was included in some cases in the running time, as shown between stations on the dispatchers' train sheets.

In order to get a definite idea of the benefits of the new siding arrangement and signaling, a study was made of the time consumed by trains on the single track between Osawatomie and Leeds. Eastbound trains covered this distance of 50.1 miles in an average of 2 hours 54 minutes on October 11, 1925, as compared with 4 hours 36 minutes on October 26, 1924, a reduction of 1 hour 42 minutes, while westbound trains consumed an average of 3 hours 36 minutes on October 11, 1925, as compared with 4 hours 10 minutes on October 26, 1924, a reduction of 34 minutes, the total reduction of delays for both directions being 2 hours 16 minutes.

Extending the study further, there were 20 delays totaling 263 minutes for the 11 eastbound trains on sidings on the day in 1925, as compared with 29 delays totaling 880 minutes on the day in 1924, equivalent to an average decrease of 56 minutes in station delay for each train. The difference between the reduction in elapsed time eastbound between Osawatomie and Leeds, 1 hour 42 minutes, and the 56 minutes reduction in station delays is accounted for by the saving in time between stations, brought about through the elimination of stops when entering and leaving siding switches because of remote control operation of the latter. Likewise a saving may be calculated similarly for westbound trains. A further study of the location of these delays shows that almost all trains stop at Kenneth for water, the average water stop being about 10 minutes when not waiting for a meet.

In conclusion, it may be said that the increased efficiency of train operation resulting from the several improvements to increase the track capacity have resulted in such a satisfactory condition that the addition of second track is not considered necessary in the near future, providing an unprecedented increase of traffic does not appear. However, when a second track later appears necessary further extended sidings and signaling equipment can be utilized to suit requirements without any material loss.

The co-operation of the operating officers in charge of this subdivision, J. Cannon, general manager; R. C. White, assistant general manager; W. F. Kirk, general superintendent, and T. W. Cheatham, superintendent, has been the deciding factor toward making this project a success. The scientific siding spacing, the foundation on which the improvements on this subdivision were built, was developed by the signal engineer, B. H. Mann, through his "Train Economy" studies. It is to these officers that the *Railway Age* is indebted for the information included in this article.

THE BROAD STREET STATION of the Pennsylvania Railroad at Philadelphia is now 44 years old, the first train having been run out of the station on December 5, 1881. The general offices of the company were moved into this building from South Fourth street in 1894.

## How Keen Is Bus Competition?

THE existence of bus competition is generally recognized. Its extent and its intensive nature, however, are less familiar. The condition prevailing in some parts of the east is graphically illustrated in the accompanying maps. These show the main line and branch lines of the Delaware, Lackawanna & Western in the states of New Jersey, Pennsylvania and New York, together with the bus routes which either compete with the railway or serve as feeders to it and to its competitors. In brief, the situation is this: There is bus competition along 230 miles of the Lackawanna's 396-mile main line, and along 317 miles of its 597 miles of branch lines. Thus, 55 per cent of the mileage of the Lackawanna is paralleled by competing bus lines.

The Lackawanna may be accepted as typical of the eastern roads. It has one main line and a number of branches reaching out from the main line at frequent intervals along its length. Its passenger traffic is similar to those of others in its region in the proportion of

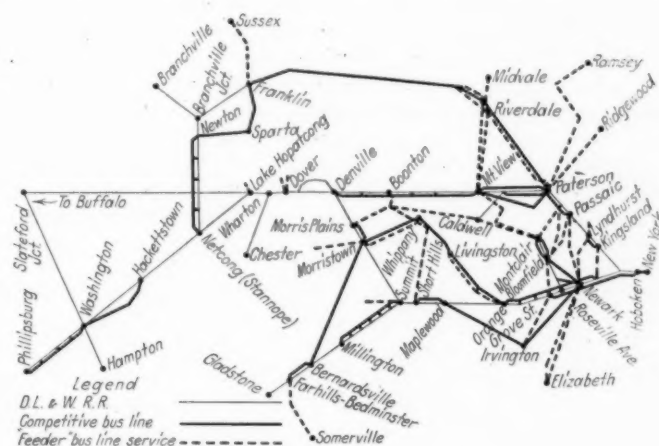


Fig. 1—Bus Competition in New Jersey Is Severe

through to local business, and it likewise has a heavy commutation traffic in the vicinity of New York.

### Sharp Competition in New Jersey

Examination of the Lackawanna territory in New Jersey indicates that there are few places where the railway has a clear field. Almost from one end to the other of its line, competing bus lines are in operation. On the main line out of New York little competition is encountered until Paterson, N. J., is reached but there are two competing routes parallel to even this section, one between Paterson and Passaic, and another between Lyndhurst and Kingsland. From Paterson to Denville, however, there is constant competition, with competition from two bus routes for about a fourth of the distance. West of Denville in New Jersey there is no bus competition on the main line.

From New York to Montclair, N. J., over which a heavy suburban traffic is carried, there is bus competition for the entire distance. This has had the effect, as it has on other suburban lines, of taking from the railway the only traffic which is profitable, that is, the occasional passenger, rather than the regular commuter. From Newark bus lines radiate to several points, competing for passenger business with that portion of the Lackawanna from Newark to Short Hills, and from Newark to Morristown and Morris Plains. The branch from Summit to Gladstone meets with bus competition for over half of its length, one bus line extending from

Summit to Billington and another from Far Hills to Bernardsville, where it cuts across country to intersect the Lackawanna again at Morristown. The branch lines to Branchville and Franklin also meet with competition not only locally but for through business to Paterson. This competition is furnished by a bus line extending from Paterson via Franklin and Sparta to Netcong. The Phillipsburg branch is also in competition with a bus line which extends from Phillipsburg to Hackettstown. Aside from these competing bus lines there are over a score of bus routes in New Jersey which serve as feeders to the Lackawanna and its competitors. These radiate from all the larger points on the main line, including Newark, Paterson, Montclair, Bloomfield, Mountain View, and Orange.

#### Less Competition in Pennsylvania

One of the bus lines shown on the accompanying map of Pennsylvania operates under extraordinary circumstances, which indicate significantly the general situation in that state. Between the New York state line and Scranton this bus line is not permitted to carry intrastate passengers, under an order of the Pennsylvania Public Service Commission. It cannot be prevented, however, from soliciting interstate business from Scranton, Pa., and other points, to New York destinations in either direction. That the competitive bus line is not restricted from soliciting interstate business is due to the lack of regulation, of any sort, of highway carriers carrying on an interstate business.

The Lackawanna is not free from bus competition in

the rule rather than the exception in New York state. The Lackawanna has three lines radiating from Binghamton: the main line which extends in a westerly direction, and two branch lines which extend in a northerly direction. There is bus competition along all three of these.

One bus line extends from Binghamton to Nichols on the main line, while other competing bus routes parallel the Oswego branch as far as Syracuse and the Utica branch as far as Earlville. There is further competition at the northern end of the Utica branch, one route extending from Waterville to Utica, another from Clayville to Utica, and another from Utica to West Wynfield on the Richfield Springs branch.

The branch line from Oswego on the main line to Ithaca meets with bus competition for its entire length.

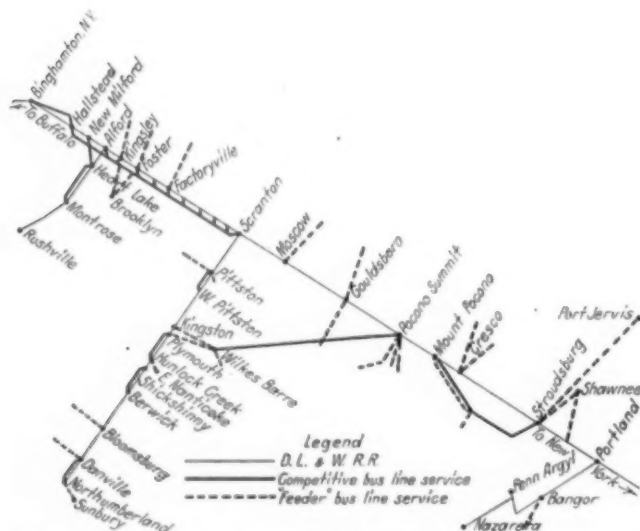


Fig. 2—Lackawanna Lines Meet Less Bus Competition in Pennsylvania

Pennsylvania, however. A bus line competes with it for passenger business along the main line from Stroudsburg to Mt. Pocono and from the main line at Pocono Summit to points along the branch line from Scranton to Sunbury. Four other bus lines parallel the Lackawanna's Scranton-Sunbury branch between various points.

The only other competitive bus line extends from New Milford to Montrose, this one competing for business along the Rushville branch. Feeder bus lines tap the Lackawanna at a number of points, including Stroudsburg, Cresco, Mt. Pocono, Pocono Summit and Bangor.

#### Competition Extensive in New York

Bus competition along the lines of the Lackawanna is

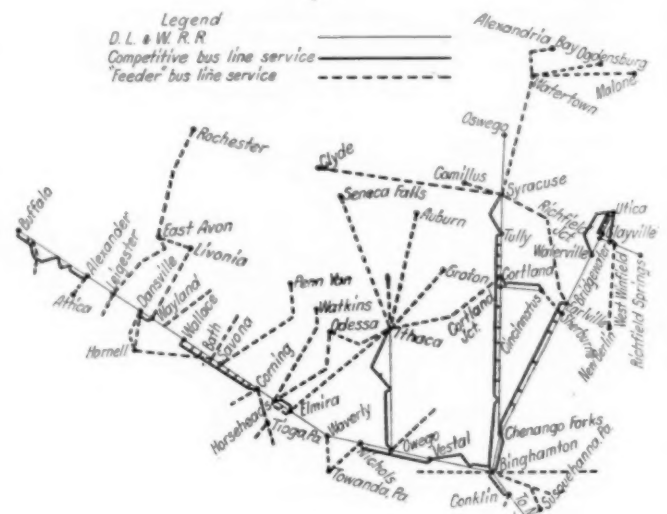


Fig. 3—There is Almost Universal Bus Competition in New York

Farther west there is bus competition along several disconnected parts of the main line. One bus route extends from Elmira to Horseheads, another from Corning to Wallace, a third from Wayland to Dansville, and a fourth from Alexander all the way to the western terminus at Buffalo.

Feeder bus lines are particularly prevalent in New York state. These radiate from many points along the Lackawanna, including Syracuse, Ithaca, Binghamton, Horseheads, Corning, Dansville and Leicester. These bus competitors have been an important factor in reducing the passenger revenues of the Lackawanna from \$14,256,421 in 1923 to \$13,604,986 in 1924. The situation along the Lackawanna is typical of that which will be found in the region served by all the eastern roads and by the western roads as well.

WINTER RECREATION FOR EMPLOYEES is the title of a pamphlet which has been published by the Metropolitan Life Insurance Company, New York, telling how 73 business concerns provide indoor sports, including bowling, boxing, wrestling and swimming, and outdoor sports such as hockey, skating, skiing and hiking. Successfully organized glee clubs, bands and string orchestras are also discussed. Club houses, gymnasiums, rest and recreation rooms, and hotel clubs now being used by employees are described. Equipment specifications are given of two recreation rooms and of the employees' gymnasium of the Metropolitan Life Insurance Company. A copy of the report may be had by writing to the Metropolitan Life Insurance Company, New York.



# Investment Bankers' Association

*Railroad committee reports belief that steam carriers may use buses profitably*

**"Y**OUR committee believes that, in the end, the railroads can turn this type of transportation to good use for their own progress." This comment on the competition of the highway motor vehicle was one of several interesting points brought out in the report of the railroad committee submitted at the fourteenth annual convention of the Investment Bankers' Association held at the Hotel Soreno, St. Petersburg, Fla., December 7 to 11.

The report which was prepared by a committee headed as chairman by Ray Morris, of Brown Brothers & Co., and formerly managing editor of the *Railway Age Gazette*, expressed gratification at the success had in keeping the railroads out of politics in the past five years. It discussed consolidations and emphasized the desirability of changing the law to permit voluntary mergers. It referred to the increasing burden of taxation, and again discussed the continuing tendency towards financing through bond issues. The quotation referred to above was in connection with a brief discussion of the inroads on railroad business by the automotive vehicle.

Ray Morris was managing editor of the *Railroad Gazette* and then the *Railway Age Gazette* from 1903 to 1910. He was later associated with White Weld & Co., and is now associated with Brown Brothers & Co. He is the author of "Railroad Administration." He has been prominent in the affairs of the Investment Bankers Association, notably in the capacity of chairman of its railroad committee. He also served this year as a vice-president of the association and at the St. Petersburg meeting was elected president to serve for ensuing year.

The report of the railroad committee follows:

From the standpoint of the railroad security holder, who has had reason for many years to regard as of first importance the relationship between the railroads and the various governing bodies in the United States, it is noteworthy that no important railroad legislation was enacted by the Congress which adjourned last March.

One or two rather threatening measures received serious consideration by Congress. The Gooding Bill, for example, although aimed directly at amending the long-and-short-haul clause, involved a definite re-entry by Congress into direct ratemaking. The tendency of this Congress, however, was not to disturb by such entry into the ratemaking field the general program of rate responsibility with which the Interstate Commerce Commission is charged.

Whether the greatly increased prosperity of the railroads in the year 1925 will stimulate new attempts by Congress to intervene directly or indirectly in the making of rates and of administrative regulations is, of course, problematical. Your committee feels that much progress has been made during the last five years in getting, and in keeping, railroad regulation out of politics, and there are many indications that the present administration at Washington does not favor interference with the complete and elaborate machinery which has been evolved in this country through many years of costly experimentation, to deal with the regulations of railroads.

Viewed by the experience of the last five years, the outstanding defect in the administrative portion of the Transportation Act of 1920, undoubtedly lies in the provision

which in effect requires the commission to produce a complete plan of railroad consolidation, and does not specifically empower it to confirm, as they come along, voluntary consolidations except as part of such a complete plan. It is true that Paragraph 2, Section 5, of the Interstate Commerce Act provides a temporary method of obtaining control, by purchase of stock, or by lease, or in any other manner involving the consolidation of such carriers into a single system for ownership and operation, but the Act contains no machinery for carrying consolidations into effect. From a practical standpoint, the difficulties of bringing about consolidations under a pre-arranged complete plan seem quite insurmountable. On the other hand, voluntary consolidations are sought today in many sections of the country, and it is quite obvious that an act of Congress is needed to confer the necessary powers and to provide the legal machinery to carry through any consolidations separately approved by the Interstate Commerce Commission.

Your committee wishes again to call to the attention of the Association the fact that the railroads, as principal taxpayers, are being called upon all over the country to provide a considerable portion of the cost of modern highways, which then compete with them directly at the railroads' expense. The federal system of railroad regulation has not been successful in eliminating some of the worst features involved in the control of the individual state authorities, and the problem of rapidly increasing taxation levied by local authorities against carriers whose rates are controlled by Washington is one of these bad features. Railroad taxes in 1925 have been running at the rate of about \$1,000,000 a day, and have more than doubled since 1916. In the last four years, average freight rates have declined approximately 13 per cent and taxes have increased approximately 30 per cent.

It should be observed also that the limitation of earnings on the average of  $5\frac{3}{4}$  per cent, after which certain reserves must be built up, and then the balance pro-rated with the government, has undoubtedly tended to force an undue proportion of railroad financing into the form of fixed-interest-bearing debt. In 1916, on Class 1 roads, fixed charges absorbed about 48 per cent of total income, but in 1924 they absorbed about 55 per cent of total income. This tendency has repeatedly been brought to the attention of the association. Your committee has felt that the principle of profit-sharing with the government had a certain practical merit in that, by making the government a partner in the enterprise, or at least a beneficiary, it tended to minimize hostile legislation. It seems fair to point out, however, that  $5\frac{3}{4}$  per cent is undoubtedly a very low figure if the purpose of the government is to encourage new financing with shares as well as with bonds. The railroads, after all, must be regarded as commercial enterprises, since the government takes no responsibility for meeting their fixed charges in the event that operating revenues are not sufficient for the purpose. As commercial enterprises, their financing should certainly be balanced with a larger proportion of common stock, which will not attract the investor unless it is allowed to earn more than bonds pay, but which has no fixed charge that can cause insolvency.

Your committee called attention last year to the extra-

ordinary inroads which motor trucks, automobiles, and passenger buses were making on the short-haul business of certain railroads. For example, the Chicago, Rock Island, & Pacific has called attention to the fact that in 1915 it carried 19,350,000 passengers, and in 1924 only 16,284,000 passengers. The Pere Marquette published a bulletin last year pointing out that in 1913 the company handled 5,667,058 passengers, whereas in 1923 the company handled 2,441,140 passengers. In 1913 the Pere Marquette handled merchandise in less than carload lots amounting to 1,038,809 tons and in 1923 only 522,627 tons.

In connection with this problem, the Interstate Commerce Commission allowed the Boston & Maine to abandon 58 miles of branch line during the year, and stated in its opinion:

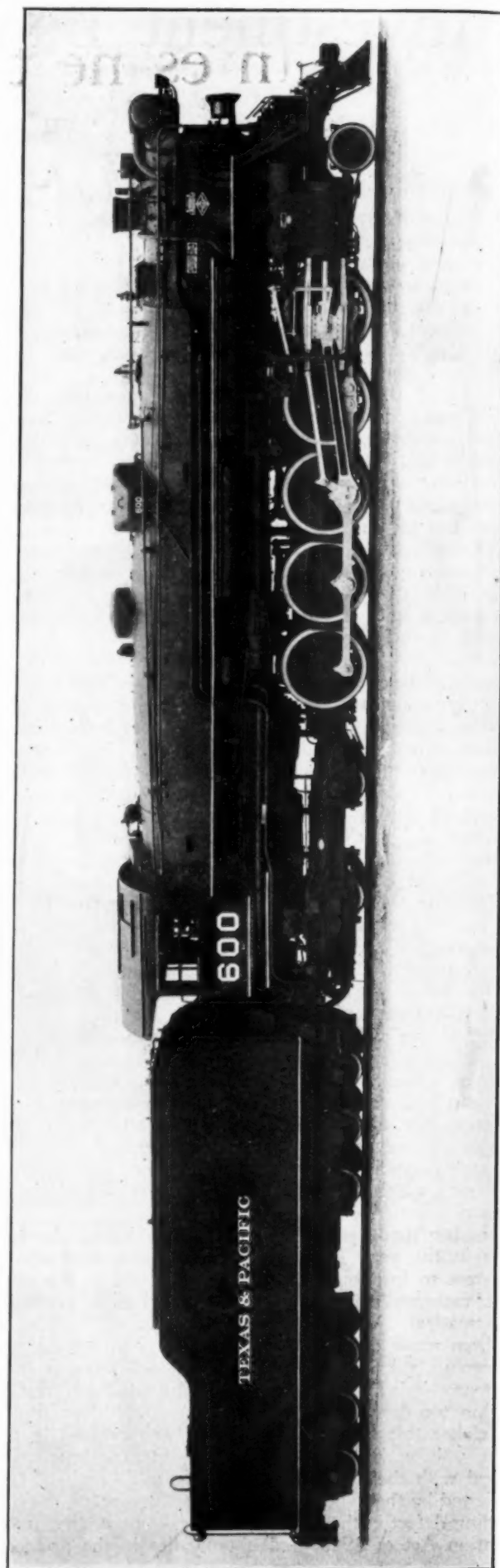
"If people prefer to tax themselves to build great highways and to use commercial trucks and passenger vehicles in preference to the steam railroad, they have a right to their decision, but they must also assume the responsibilities with the attendant consequences of that decision."

It seems wholly unlikely that the use of the motor truck, the automobile and the automobile bus will decrease; on the other hand, we must expect a very large extension of this one. From the standpoint of the railroad securities holder your committee does not believe that in the end this will prove unfortunate. The street railways have made marked progress during the last three years in the wider use of the motor bus to supplement their own lines and to provide needed extensions into thin territory. It looks as though a silent revolution was taking place in the handling of short-haul traffic, both passenger and freight, but your committee believes that, in the end, the railroads can turn this new type of transportation to good use for their own purposes. In the meantime, however, while the ways and means of doing this are being developed, a whole group of new problems is confronting both the railroad manager and the various bodies engaged in the regulation of transportation throughout this country. A bus operating across state lines, and thus becoming a vehicle of interstate transportation, is today in an anomalous position, so far as its regulation status is concerned. Your committee, however, does not feel that it is within its province to do more than to point out to the association the potentially very great effects of this new method of transportation, and the fact that it presents many new problems.

Your committee gave consideration last winter to the course of action it should take, if any, regarding the Gooding bill and the Pullman Surcharge bill. Without going into the merits of either case, it was quite clear to us that, from the standpoint of securities owners, it was important to leave jurisdiction of matters of this kind in the hands of the properly constituted body; the Interstate Commerce Commission; and that any new intervention by Congress into the direct ratemaking field would be most harmful and dangerous. In view of the fact, however, that it seemed relatively certain that these bills would fail passage, your committee did not ask for a hearing, although it was in contact with Washington on this point.

Your chairman testified at a hearing before the commission, a year ago, in the Kansas City Terminal Case, to point out the harmfulness to railroad terminal bonds if the commission should permit a charge in the operating contracts, which, in this case, furnish the basis of security, during the life of the bonds.

The report was signed by Ray Morris, chairman; Roger K. Ballard, Pierpont V. Davis, S. Harvey Hughes, F. J. Lisman, Harry Stix, J. R. Swan, Robert C. Common, Samuel L. Fuller, J. J. Hanauer, Richard L. Morris and Thomas D. Smith.



The First Texas Type Locomotive—Total Weight of Engine, 448,000 lb.; Weight on Drivers, 300,000 lb.



# First Texas Type Locomotives for T. & P.

*Have five-coupled drivers, four-wheel articulated trailer and  
cast steel cylinders—Tractive force with booster, 96,000 lb.*

**D**URING the month of November, ten locomotives of a new type were delivered to the Texas & Pacific by the Lima Locomotive Works, Inc. These locomotives, which are known as the Texas type, are similar in the principal characteristics of their design to the 2-8-4 type locomotive, known as the Lima A-1, which was first placed in service by the builder on the Boston & Albany during the early part of this year and

they develop a tractive force of 83,000 lb., which is increased to 96,000 lb. when the trailer booster is in operation. A comparison of these and other of the principal dimensions, with similar dimensions of the Lima A-1, is given in the table.

Referring to this comparison, it will be seen that the weight on drivers of the new type locomotive averages 60,000 lb. per pair, which is 2,000 lb. less than the average driving wheel loads of the Lima A-1. The weight on both the front and rear trucks, however, is greater than in the case of the former locomotive, the total difference in weight amounting to 63,000 lb.

A comparison of the boiler proportions of the two designs is also of interest. While in total evaporating



Front of the T. & P. Locomotive, Showing the Location of the Two Cross Compound Air Compressors

which has since received service tests on several other railroads. Both designs include the articulated four-wheel trailing truck carrying a large firebox; both have articulated main rods, and the cylinders in both cases operate at a maximum cut-off of 60 per cent. The new locomotives, however, have one more pair of driving wheels, making a 2-10-4 wheel arrangement, which increases the length of the boiler and the tractive force. They also differ from the Lima A-1 in that they are fitted for oil-burning service.

The new locomotives have a total engine weight of 448,000 lb., of which 300,000 lb. is on the driving wheels. With a boiler pressure of 250 lb. and 60 per cent cut-off,

COMPARISON OF TEXAS & PACIFIC 2-10-4 LOCOMOTIVES WITH LIMA 2-8-4 LOCOMOTIVE

	2-10-4	2-8-4
Cylinders, diameter and stroke, in.....	29 by 32	28 by 30
Cut-off in full gear, per cent.....	60	60
Boiler pressure.....	250 lb.	240 lb.
Weights in working order:		
On drivers.....	300,000 lb.	248,000 lb.
Front truck.....	41,800 lb.	35,500 lb.
Rear truck.....	106,200 lb.	101,300 lb.
Total engine.....	448,000 lb.	385,000 lb.
Diameter of drivers.....	.63 in.	.63 in.
Heating surfaces:		
Firebox and combustion chamber.....	473 sq. ft.	337 sq. ft.
Tubes and flues.....	4,640 sq. ft.	4,773 sq. ft.
Total evaporating.....	5,113 sq. ft.	5,110 sq. ft.
Superheating.....	2,100 sq. ft.	2,111 sq. ft.
Combined total.....	7,213 sq. ft.	7,221 sq. ft.
Grate area.....	100 sq. ft.*	100 sq. ft.
Rated tractive force:		
Engine.....	83,000 lb.	69,400 lb.
Engine and booster.....	96,000 lb.	82,600 lb.
Factor of adhesion.....	3.62	3.58

\* The firebox is fitted for burning oil.

heating surface and superheating surface the new locomotives differ but slightly from the A-1 locomotive, there is a material difference in the distribution of the evaporating heating surface as between the firebox and tubes. The tubes and flues in the new locomotives are 1 ft. 6 in. longer than those in the earlier locomotive, but are fewer in number, accounting for the reduction in the amount of tube and flue heating surface. The firebox, however, including the combustion chamber and the two Nicholson thermic syphons, has a materially larger amount of heating surface, the proportion of firebox heating surface to evaporative heating surface thus being increased from 6.6 per cent in the Lima A-1 to 9.26 per cent in the new locomotives, a difference which, on the basis of Cole's ratios, would account for approximately 10 per cent more evaporating capacity. The increase in cylinder tractive force from 69,400 lb. to 83,000 lb. amounts to about 19 per cent. The Texas type locomotives will be assigned to the Ft. Worth and Rio Grande divisions between Marshall, Tex., and Big Springs, a distance of 450 miles. The ruling grades on these divisions approximate 1.5 per cent and extend from five to eleven miles in length. Heavy curvature is encountered, making necessary the use of the booster in ascending the heaviest portions of these grades.

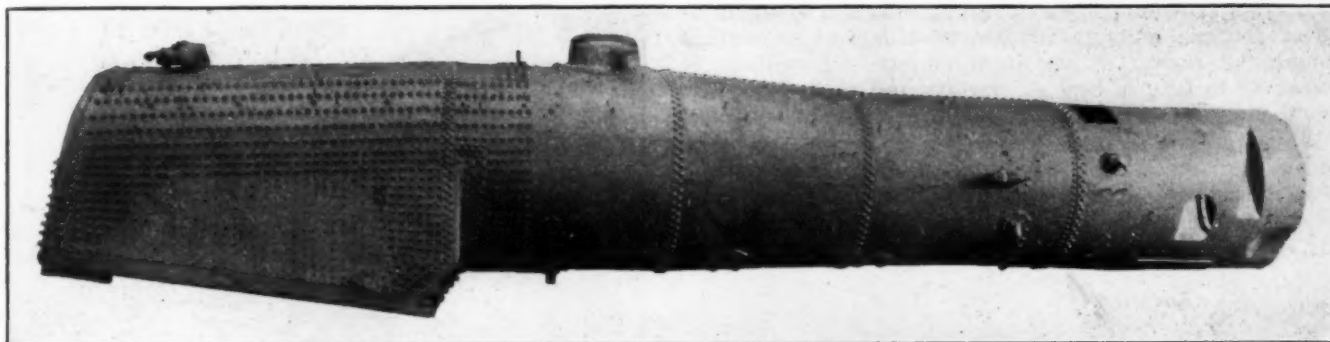
The boilers of the new locomotives, aside from the





increase in length made possible by the increase in the wheel base, differ principally from the boiler of the A-1 locomotive in the inclusion of a 42-in. combustion chamber, in the location of the dome just in front of the combustion chamber, and in the use of an inside dry pipe. It will be remembered that the dome in the earlier

service, with a 4-in. Booth burner entering the front of the draft pan which is set back about one-third the length of the firebox from the front of the mud ring. The locomotive is designed, however, for possible later conversion to coal-burning service, in which case the two Nicholson thermic syphons will serve as arch supports.



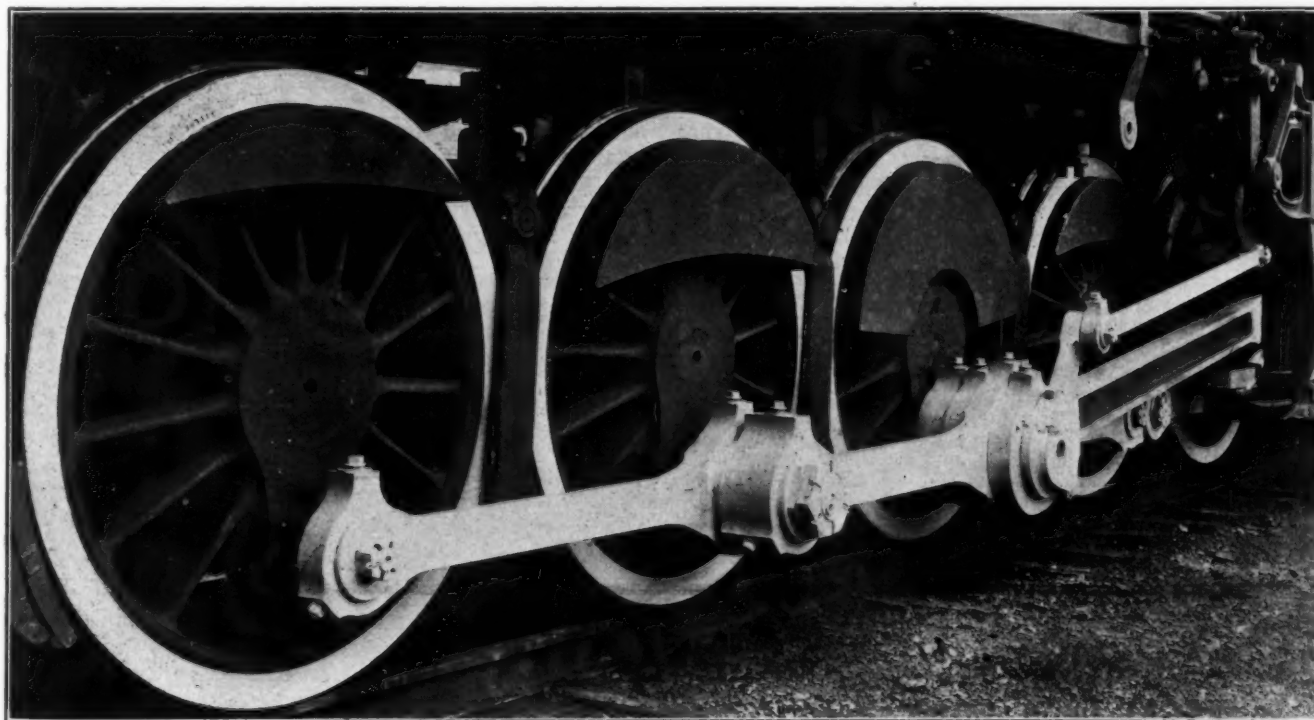
The Boiler—The Firebox Measures 150  $\frac{1}{8}$  in. by 96 $\frac{1}{4}$  in. at the Mud Ring

locomotive was located on the front boiler course, with a short outside dry pipe. The dome course in the new boilers is 98 in. in outside diameter, this being reduced by a taper course to 86 $\frac{1}{2}$  in. at the front course. A shut-off valve, by which the entrance to the dry pipe may be closed, is located in the dome, the operating handle extending out through the right side of the dome. The tubes are 21 ft. 6 in. long and the tube sheets are laid out with 184 flues 3 $\frac{1}{2}$  in. in diameter, for a Type E superheater of 92 units. With the exception of the change in

The locomotives are fitted with an Elesco feedwater heater carried on brackets on the front end. The feedwater pump is located under the running board on the left side of the locomotive.

#### Cylinders, Frames and Running Gear

The cylinders are 29 in. in diameter by 32 in. stroke. They are steel castings with Hunt-Spiller gun iron bushings and, like the cylinders of the Lima A-1, the exhaust steam is carried from extension valve chamber heads



The Rod Arrangement on the T. & P. Locomotives—The Articulated Main Rod Connection Between the Third and Fourth Driving Wheels is Shown

the dry pipe, the front end arrangement is essentially the same as that of the Lima A-1. The unit bolts of the superheater header are accessible through a rectangular opening in the top of the smokebox shell and the Chambers front end throttle is located between the superheater header and the branch pipes forward of the smoke stack.

The firebox, which has the same inside dimensions at the mud ring as the Lima A-1, is fitted for oil-burning

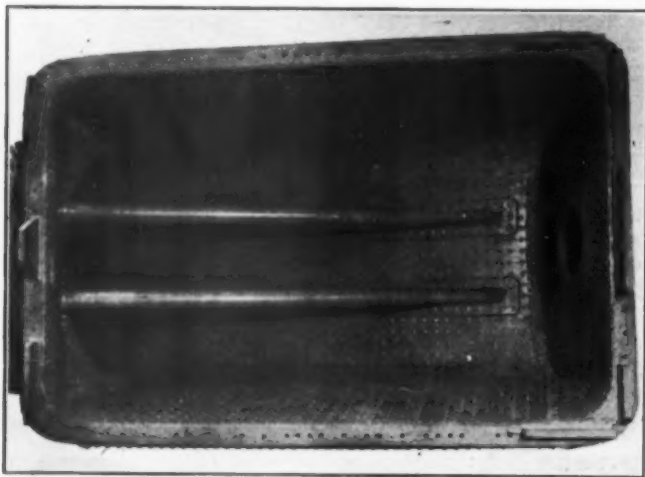
through cast pipes which are bolted to openings on the front and back faces of the saddle casting, from whence the exhaust steam is carried inward and upward through cored passages to the exhaust nozzle base at the top of the saddle. These are the only steam passages in the saddle portion of the cylinder castings. The exhaust nozzles are fitted with tips having the Goodfellow internal projections.

This cylinder construction is shown clearly in one of the illustrations. It has made possible a reduction of the metal sections such that a saving of approximately 4,000 lb. has been made in the weight as compared with equivalent cast iron cylinders.

The valve chamber bushings are fitted with the usual auxiliary starting ports necessary where the locomotive is to operate at a limited maximum cut-off, and in order to effect the maximum attainable smoothness of starting torque the cut-off at the front end of the cylinder is increased to 63 per cent at starting and slow speeds by lengthening two of the ports in the front valve chamber bushings. Where the auxiliary starting ports were formerly placed at the bottom of the bushings, they have been moved around to the outside of the bushings in the Texas type locomotives, making them accessible for

the trailer frame through combined expansion and lateral motion roller bearings, one on each side of the locomotive. The front end of the firebox is supported from the rear end of the main frames by buckle plates.

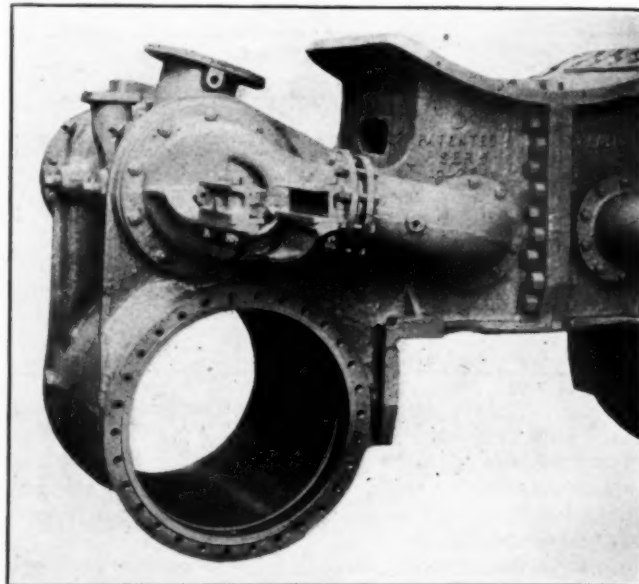
The five pairs of drivers are continuously equalized on



Interior of the Firebox, Showing the Position of the Nicholson Thermic Syphons

examination and cleaning by the removal of plugs from the outside walls of the valve chamber. Steam distribution is controlled by Baker valve motion producing a valve travel of  $8\frac{3}{4}$  in., and by the Alco reverse gear.

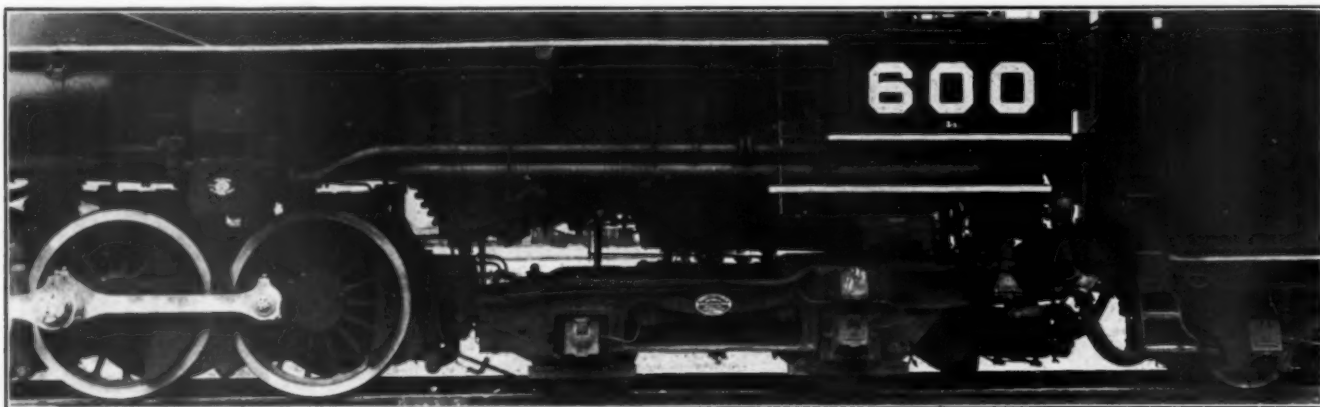
The frame and running gear designs are the same in



The Cast Steel Cylinders Showing One of the Outside Exhaust Passages

each side of the locomotive, starting from a fixed point back of each rear driver, and are cross-equalized with the engine truck. Each side of the trailing truck is equalized as a unit. This is the same system of equalization as that of the Lima A-1.

The trailer frame of the Texas type locomotives is a one-piece steel casting, the front end of which forms the hinge and in the rear end of which is incorporated the pocket for the Unit drawbar between the engine and tender and on which is mounted the Radial buffer. This casting is shown in one of the photographs.



The Relation of the Articulated Trailing Truck to the Firebox

principal as those of the 2-8-4 type locomotive. The main frames terminate just back of the rear drivers and between them is bolted a heavy steel hinge casting in which the tongue of the articulated trailing truck is secured by an 8-in. hinge pin. Continuity of the alignment of the main frames and the trailer frame in every respect except lateral turning is secured by the bearing of the top rail of each main frame upon a sliding surface on the hinge extension of the trailer frame, and by supporting the rear end of the firebox directly on the rear end of

The cab is supported on cast steel arms which are bolted to the rear corners of the mud ring and in which are incorporated the top members of the expansion and lateral motion bearings. The wind sheet extending down from the rear end of the cab deck is divided into two parts so that by the removal of the lower sheet it is possible to run the trailer truck out from under the locomotive without lifting the rear end of the boiler more than enough to relieve the trailer of its load. The booster, which drives on the rear pair of trailing wheels,



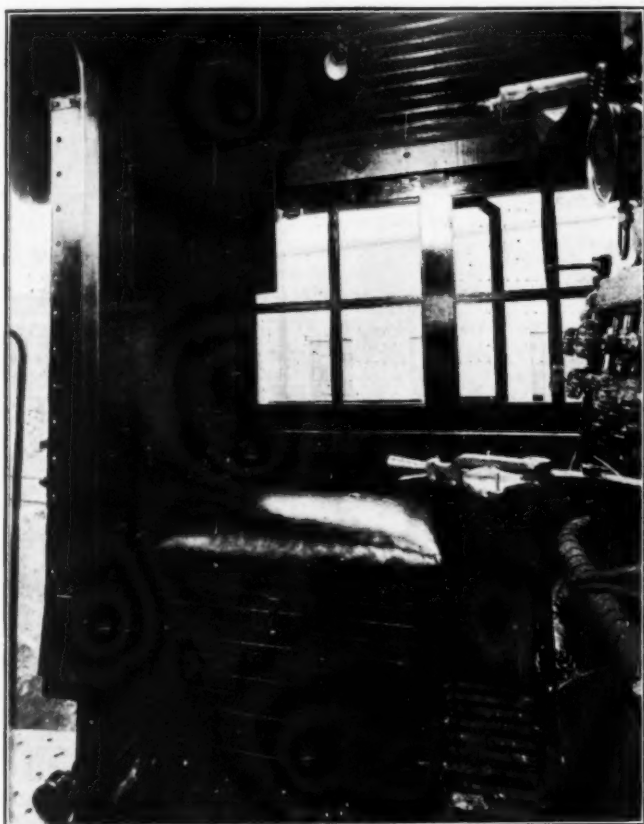
is supported from the truck frame by a yoke casting behind the wheels.

The five pairs of drivers are driven by articulated main rods of the type used on the A-1, driving on the third and fourth crank pins. Side rods distribute the load from the third pair forward to the second and first, and to the rear from the fourth to the fifth. An interesting feature of the rod arrangement is the setting out of the



The Articulated Trailer Frame Casting

back side rod pin bearings 3 in. from the face of the wheels, the increased clearance thus provided being used to bring the center of gravity of the counterbalance of the fourth and fifth wheels out nearer to the plane of the reciprocating parts. The forward driving axle is fitted with lateral motion driving boxes designed to provide a total lateral movement of  $1\frac{1}{2}$  in.



The Fireman's Side of the Cab Showing the Wardrobe Locker

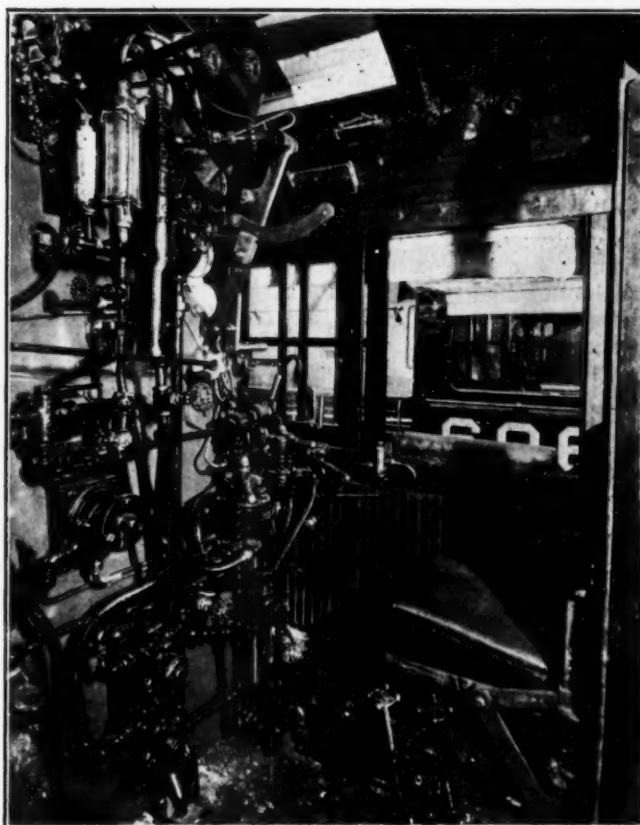
The material in the main and side rods is normal carbon-vanadium steel. The piston rods and crank pins are of chrome-vanadium, heat treated, the main crank pins being hollow-bored and the others solid. The piston centers are Carnegie rolled steel fitted with Hunt-Spiller gun iron bull rings and packing rings.

#### Lubrication and Auxiliary Equipment

The cylinders receive lubrication from three sources. The principal source is a Nathan Type DV force feed

lubricator, the four feeds of which deliver oil to the cylinders and the valve chambers. A Nathan five-feed hydrostatic lubricator is provided for the air pump, the feedwater pump and the booster. The other two feeds are connected to the steam pipes as high above the cylinders as the fittings can be conveniently applied. In addition to these lubricators, a National Graphite Company pendulum type graphite lubricator is fitted in the neck of the superheater header where the saturated steam enters.

Superheated steam is carried back from the superheater header to a superheated steam turret on the left side of the boiler just in front of the cab. This header furnishes steam to the air pumps, the feedwater pump, the headlight generator, the blower and the fuel oil heaters and



The Engineman's Side of the Cab—The Seat is Spring Suspended and Folds Back—Note the Whistle Valve at the Front of the Arm Rest

atomizer. The whistle, which also uses superheated steam, is located well forward on the boiler alongside of the bell. The whistle fitting is welded directly on the superheated steam pipe which feeds the turret. The sound of the whistle is increased in volume and sharpness by the use of superheated steam, and this location—made possible by the use of the Parsons pneumatic operating rigging—protects the occupants of the cab from the unpleasant effect of this sound at close range. Placing the whistle well forward on the boiler and to one side, where it is not directly behind the stack, is also expected to effect some improvement in the forward projection of the sound.

One of the interesting details on this locomotive is the Unit pipe clamp and bracket for the main reservoir and running board. This provides a secure anchor for holding three lengths of air radiator pipe above the reservoir. The clamps are securely held by the same bolts which hold the running board in place.

One of the photographs shows the arrangement of the back boiler head fittings in the cab. It will be seen that

great care has been exercised in arranging the control apparatus where it is conveniently accessible to the engine-man and will not interfere with his movement to or from his seat. The water glass, the hydrostatic lubricator, the various pressure gages and the Boyer speed recorder dial have all been grouped and disposed where they can be seen at a glance, most of them directly in front of the engineman, but without interfering with his view through the front cab window. The whistle operating valve is located against the side of the cab just forward of the engineman's arm rest where he can press it without taking his attention from the track.

Considerable attention has also been given to arrangements for the personal convenience and comfort of the engine crew. The engineman's seat in addition to being spring upholstered, is also spring supported and adjustable in height. It may be folded back out of the way when room is needed by workmen employed in the cab or when the engineman wishes to work standing up. Built onto the wall of the cab back of the fireman's seat box, is a wardrobe locker. This is accessible through a high door back of the fireman's seat and also through a small door at the bottom in the gangway. An ample luggage rack is also provided under the cab roof over the gangway.

The locomotives are served by tenders with a water capacity of 14,000 gallons and a fuel oil capacity of 5,000 gallons. The tanks are of the Ralo-Acme type of construction, carried on Commonwealth cast steel frames and two Commonwealth six-wheel trucks. The tender has been designed to permit the application of a stoker with a minimum of alterations should it later become desirable to convert the locomotives from oil-burning to coal-burning service.

The principal dimensions and proportions of these locomotives are given in the following table:

Railroad	Texas & Pacific
Type of locomotive	2-10-4
Service	Freight
Cylinders, diameter and stroke, in.	29 by 32
Valve gear, type	Baker
Valves, piston type, size	14 in.
Maximum travel	8 3/4 in.
Steam lap	2 7/8 in.
Exhaust clearance	1/8 in.
Cut-off in full gear, per cent.	60
Weights in working order:	
On drivers	300,000 lb.
On front truck	41,800 lb.
On trailing truck	106,200 lb.
Total engine	448,000 lb.
Tender	275,200 lb.
Wheel bases:	
Driving	22 ft.
Rigid	16 ft. 6 in.
Total engine	46 ft. 8 in.
Total engine and tender	86 ft. 8 in.
Wheels, diameter outside tires:	
Driving	63 in.
Front truck	33 in.
Trailing truck	36 in. and 43 in.
Journals, diameter and length:	
Driving, main	13 in. by 14 in.
Driving, others	11 in. by 13 in.
Front truck	7 in. by 12 in.
Trailing truck	6 1/2 in. by 12 in. 9 in. by 14 in.
Boiler:	
Type	Taper course
Steam pressure	250 lb.
Fuel, kind	Oil
Diameter, first ring, outside	86 1/2 in.
Firebox, length and width	150 1/2 in. by 96 1/4 in.
Height mud ring to crown sheet, back	60 3/4 in.
Height mud ring to crown sheet, front	93 in.
Arch tubes, number and diameter	2 Syphons
Combustion chamber length	42 in.
Tubes, number and diameter	82—2 1/4 in.
Flues, number and diameter	184—3 1/2 in.
Length over tube sheets	21 ft. 6 in.
Grate area	No grate
Heating surfaces:	
Firebox and comb. chamber	3,755 sq. ft.
Syphons	98 sq. ft.
Tubes and flues	4,640 sq. ft.
Total evaporative	5,113 sq. ft.
Superheating	2,100 sq. ft.
Comb. evaporative and superheating	7,213 sq. ft.
Tender:	
Style	Rectangular
Water capacity	14,000 gal.
Fuel capacity	5,000 gal.
Rated tractive force	83,000 lb.
Rated tractive force, incl. booster	96,000 lb.

Weight proportions:	
Weight on drivers ÷ total weight engine, per cent.	67.0
Weight on drivers ÷ tractive force	3.62
Total weight engine ÷ comb. heat. surface	62.1
Boiler proportions:	
Tractive force ÷ comb. heat. surface	11.5
Tractive force X dia. drivers ÷ comb. heat. surface	725.
Firebox heat. surface ÷ grate area	4.73
Firebox heat. surface, per cent of evap. heat surface	9.26
Superheat. surface, per cent of evap. heat. surface	41.1

## Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading for the week ended December 5 amounted to 1,020,873 cars, an increase of 51,388 cars as compared with the corresponding week of last year and of 106,952 cars as compared with 1923. This is the first time on record that a million-car week has been experienced after Thanksgiving, the heavy loading being attributed principally to heavy shipments of grain and grain products, which showed a higher figure than for any preceding week this year, and of bituminous coal, merchandise and miscellaneous freight. Increases as compared with the corresponding weeks of the two preceding years were shown in all districts, the largest increase being in the Pocahontas district, and there were increases as compared with last year in all classes of commodities except livestock, coal and forest products. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING—WEEK ENDED DECEMBER 5, 1925

Districts	1925	1924	1923
Eastern	227,913	224,064	222,413
Allegheny	199,661	189,481	185,025
Pocahontas	60,064	47,949	37,314
Southern	162,863	154,096	134,992
Northwestern	121,470	119,437	119,243
Central Western	167,639	157,471	149,063
Southwestern	81,263	76,987	65,871
Total Western	370,372	353,895	334,177
Commodities			
Grain and grain products	59,529	54,021	51,667
Livestock	36,683	42,958	42,936
Coal	191,821	193,763	173,158
Coke	15,967	10,895	11,393
Forest products	70,074	73,273	64,741
Ore	13,172	10,491	11,716
Mdse., l. c. l.	262,473	249,537	245,909
Miscellaneous	371,125	334,547	312,401
Total	1,020,873	969,485	913,921
November 28	923,213	870,131	835,081
November 21	1,057,674	1,010,919	990,299
November 14	1,050,758	1,016,843	992,050
November 7	1,063,372	995,279	1,036,221
Cumulative total 49 weeks	48,500,173	46,029,031	47,419,310

The freight car surplus for the week ended November 30 averaged 136,796, an increase of 11,978 cars as compared with the week before. This included 43,658 coal cars and 58,463 box cars. The Canadian roads for the same week had a surplus of 8,220 cars, including 5,000 box cars.

### Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended December 5 were 3,845 cars less than for the previous week, but were 11,795 cars ahead of the same week last year. Although the decline was largely seasonal there was a drop of 2,438 cars in coal. Grain and other commodities showed decreases.

Commodities	Total for Canada			Cumulative totals to date	
	Dec. 5, 1925	Nov. 28, 1925	Dec. 6, 1924	1925	1924
Grain and grain products	21,331	22,072	12,979	460,588	463,491
Live stock	3,087	3,238	3,517	120,863	118,220
Coal	6,731	9,169	7,404	222,729	272,246
Coke	488	553	336	15,074	11,679
Lumber	3,167	2,389	3,419	173,226	176,066
Pulpwood	2,196	1,655	1,377	121,964	119,184
Pulp and paper	2,493	2,429	1,853	100,875	96,251
Other forest products	2,424	3,122	2,426	137,629	124,638
Ore	1,317	1,400	1,167	69,822	61,804
Merchandise, l. c. l.	16,277	15,228	15,258	749,894	716,604
Miscellaneous	13,097	14,198	11,077	636,607	599,562
Total cars loaded	72,608	76,453	60,813	2,809,271	2,759,745
Total cars received from connections	34,177	33,996	30,820	1,628,627	1,541,287



# A Handbook on Railroad Legislation

*Railway Business Association issues booklet of talking points on Transportation Act amendments*

**"S**IXTY-NINTH Congress and the Railroads" is the title of a 12-page booklet recently issued to members by the Railway Business Association. The pamphlet is designated a handbook of talking points for business men on proposed amendments of the Transportation Act. "Many minds in and out of Congress," the introduction by Alla B. Johnson, president of the association, says, "have co-operated in compiling this handbook. It is intended to supply in convenient form answers to the questions commonly asked regarding the federal laws for the regulation of railways. Substantially, the statements in bold type are the planks of the Railway Business Association platform adopted in their annual meeting on November 11, 1925."

The handbook discusses six leading points at issue in the following words:

## **1. Consolidation of railways should not be compulsory.**

Development according to business judgment is more likely to be wholesome and stable than that which is forced by government. A decree threatening ultimate coercion would throw our whole railway world into uncertainty.

An amendment is urged providing after five or seven voluntary years a compulsory pooling of income, which is the same in effect as compulsory merger. Owners and managers would have constantly before them the apprehension lest consolidations would be effected from a political instead of a business standpoint, and, having no basis for judging future earnings and income, boards of directors would limit their managers to operation, postponing so far as possible capital investment in the extension and modernization of plant.

### LET TIME TEACH WISDOM

Under the present law, no railway need enter into a merger without consent of its stockholders. The government forcibly stopped consolidations. By making them permissive it reverses that position, admitting that compulsion was wrong and voluntary development right. Owners and directors of railways as well as others differ. There may be merit in the view of each. Time and experience will bring wiser courses than an immediate act of Congress.

### STRONG AND WEAK ROAD PROBLEM

Many welcome consolidations as a means of reconciling the public to adequate rates by equalizing the income basis of the roads and so eliminating the disparity which has fostered envy against the most prosperous lines. Some of these inquire how this cure can be assured if we refrain from compulsion of mergers. We reply (1) that without coercion the process of consolidation will move as fast as it can short of haste involving serious evils; (2) that coercion instead of hurrying mergers would retard them—involving the situation in the uncertainty and fear of politics in business which always paralyzes initiative and kills confidence.

### COERCION NEEDLESS

It is urged by others that if certain lines are regarded as undesirable by every consolidating group they will be

"left in the lurch." Adjustment of such situations through the administrative procedure of conditional sanctions by the commission is preferable to statutory compulsion. On the other hand it is asked whether a consolidation approved by the commission should be permitted to be in part frustrated by refusal of a desirable line to come in on warrantable terms. The evils of compulsion are more serious than the delay which might be incurred while a proposed system otherwise complete was convincing the owners of some one road that its price is too high. Moreover, any such road would be likely to see that it had no market except through the commission and prefer reasonable terms to none.

## **2. In whatever federal agencies may be maintained or created for the adjustment of railway labor disputes the public should continue as now to be represented, to the end that railway strikes shall not be revived. We oppose the principle of the Howell-Barkley bill.**

The public is rightly determined that railway labor disputes shall be adjusted without interruption of service and that strikes shall neither occur nor threaten. The nation is ready at all times to hear fully and judge fairly testimony and argument in support of changed terms of employment in the train-running departments. The nation is not willing that force or the threat of it shall enter as a factor into such adjustments. Some urge that awards should have "teeth"; that penalties should enforce obedience. Up to the present time the view has prevailed that the recourse of insurrection against intolerable injustice should be preserved. But if labor retains that recourse it must not abuse it; and always before resort to the strike the public should have opportunity to decide whether injustice is actual by studying the facts and conclusions found by a tribunal in which the public occupies a dominant position.

## **3. We see no present necessity for amending the rule of rate-making as contained in Sec. 15a, Transportation Act. Should amendments be undertaken, the Interstate Commerce Commission should retain the duty of permitting the roads, as a whole or by geographical groups, an opportunity to earn an income sufficient as a credit basis for adequate enlargement of facilities.**

Such is now the law. Its object, satisfactory transportation service, is being accomplished. Heavier traffic in the near future would afford a more conclusive test. If modifications are ultimately needed they can be more intelligently considered after consolidation has further progressed.

Nobody knowingly wants rates to be too low for the public interest except those who seek to profit selfishly at the expense of others or those who aim to bankrupt the roads, breaking transportation down and forcing federal seizure.

### A NATION-WIDE INCOME POOL

One proposal is to replace the recapture clause with one under which income taken from the more prosperous roads would be not lent to those less prosperous but given to them; and the author of the plan suggests trying it on a national basis. Serious misgivings have been ex-

pressed. It is asked whether the strong roads would tend to toil and economize that the weak might receive part of the reward; and whether the weak roads would labor and save if they knew their necessities would be met from the income of the strong. The plan has been contrasted with the consolidation project. "One," it is remarked, "would give us 20 systems each pooling income within itself; the other would be one national pool all ready for federal seizure."

#### RATE-MAKING RULE ESSENTIAL

Some who want rates to be high enough for the public interest assert that that object requires no provision of law. History says it does.

Before 1920 the legal status of railroad rates rested upon two foundations. (1) The Constitution and the common law protected each individual shipper against extortion and each individual carrier against confiscation. (2) The Interstate Commerce Act forbade that any single rate should be unjust, unreasonable or unduly discriminatory. Neither of these ordinances had any bearing on adequacy of income for satisfactory service as a purpose to be fostered through regulation. What was the result? Declining credit, laggard improvements, freight congestion at traffic peaks.

In 1920 a new object of regulation was proclaimed to supplement the old. It was enacted into the statute that the commission should permit such rates that on the entire traffic the roads as a whole or the roads in each of a number of groups as a whole can earn as near as may be a return sufficient for the transportation needs of the country and for the enlargement of facilities in order to provide adequate transportation. What was now the result? Rising credit, vigorous improvements, prompt and satisfactory freight service at new record traffic peaks.

It was under the new law that investors' confidence came back and capital resumed its flow into railways. Who wants to risk wrecking confidence and damming the investment stream again for the sake of a theory that no such provision is required?

#### NO GUARANTEE

Others urge repeal of the adequate income provision altogether in order to get rid of what they consider a guarantee. Giving groups of roads an opportunity to earn a sufficient income means that some roads will earn it and others not. It involves no recovery of the deficit by those who do not earn sufficient, hence it is not a guarantee. Millions of citizens have been led to believe that it is. They dislike the announcement by the commission of a rate per cent of return as the aim of regulation and the specification in the statute of 6 per cent as the return above which the government recaptures half. The Railway Business Association opposed in 1920 the insertion of any rate per cent in the act and has never changed its mind. The act is not perfect. But no benefit from perfecting amendments would atone for the loss if in passing these Congress weakened the vital feature of the section, namely, the mention of adequate transportation as an object of rate regulation and, as the means thereto, authority for the commission to measure adequacy of income by railroad groups.

#### WE PAY FOR WHAT WE GET

Admitting that there is no guarantee, some declare that an adequate-income rule tends to raise rates. Only when they are too low. An adequate-income clause aims at rates low enough so that the traffic can move and high enough so that the railways can move it. In some situations a reasonable trial proves this impossible and the business either shifts to new centers or disappears like any other activity hopelessly uneconomic.

#### RECAPTURE TEMPORARY

Many have never been reconciled to the recapture by the government of income in excess of a certain rate per cent, and among these are some who to repeal recapture would give up the rule of adequate income. This view gives relatively too much consequence to recapture. The recapture idea was a stop-gap pending consolidation. Its authors expected consolidation to equalize income. If the recapture clause is not repealed in terms, consolidation will render it obsolete. Preferences as to a transitory provision should not prevail to eliminate the permanent fundamental that transportation should be adequate.

**4. The long-and-short-haul section of the Interstate Commerce Act should retain discretion for the Interstate Commerce Commission to grant shippers relief from the hardships of a rigid rule not everywhere reasonably applicable.**

The so-called Gooding Bill, which failed in the last House after passing the Senate, was avowedly designed to reverse by statute a decision of the commission in a single regional controversy. We oppose it as an attempt at rate-making by the legislative body instead of by the competent administrative tribunal. Moreover, the proposed cure for an alleged evil in one region would automatically work chaos in every other region, as was shown at the hearings by witnesses from every part of the country.

**5. The valuation of railway property already far advanced under a law of Congress should be concluded without legislative change of basis and without avoidable delays.**

The valuation was undertaken by the government under a bill introduced as a measure hostile to the railways and carried through at a cost of many millions to the roads and the government.

Some of those who avow government ownership as their aim are advocating changes in the basis which would scale valuation down, some computing this at 50 per cent.

#### STABILITY IN VALUATION

Improvement in railway credit has been founded upon confidence that the law defining the factors to be valued would remain untinkered. Stability in the rule of rate-making presupposes stability in the rule of valuation. The real problem is not to provide some theoretically fair return measured by a rate per cent, but to provide the number of billion dollars of income necessary for service satisfactory to the public. Reduce the rate of return and you must scale up the valuation. Reduce the valuation and you must scale up the rate of return. The paramount consideration is service. The mischief would arise from panic while legislation, if undertaken, was under discussion. Prospective investors in securities would fear that some rate of return would attain vogue and the value into which it was multiplied, instead of being fixed in accordance with the present law would under an amendment be reduced, cutting down the dividends and interest. The public will only buy railway securities, if any, at prices fixed to yield a return equal to what can be obtained in other industries. Meantime holders of issues outstanding, including institutions, would face a scale-down. What is needed is so many declarations by Congressmen against tampering with the valuation law now in force that the investing and fiduciary world will dismiss its fears on that score.

#### SPEED IN VALUATIONS

Appropriations for the valuation program should be available to the commission annually, standing in each budget as a matter of course like the provision for all



other uncompleted projects to which the government stands committed. The valuation should be completed as early as possible. The government also should co-operate in expeditious judicial determination of the issues upon which the validation of valuations will depend.

**6. Control by the Interstate Commerce Commission should continue over state-made rates.**

Some, among whom those most prominent are state commissioners and their spokesmen, persist in the demand for repeal of federal control. Often it is the same advocates who urge repeal of all provisions requiring income to be adequate. The financial requirements of an interstate carrier can be dealt with only as a whole, and where regulators conflict, under one final control. The treasury of an interstate railroad is all one and its revenue the sum of interstate and intrastate earnings. Each must bear its proportion. If rates are unduly depressed in any state then the people of other states must make it up either in rates higher than are just or in poor service. Every state requires protection and can have it only through the Interstate Commerce Commission.

The remedy for difficulties arising over state rates is co-operation between the federal and state authorities. For this the federal law provides and important progress has been made in its development.

## Mellon Appointed Director General of Railroads

WASHINGTON, D. C.

**P**RESIDENT COOLIDGE on December 14 accepted the resignation of James C. Davis as director general of railroads and agent of the President to effect the liquidation of the affairs of the Railroad Administration, effective on December 31, and appointed Andrew W. Mellon, secretary of the treasury, as his successor. All of the claims of the carriers whose property was taken over by the Railroad Administration have been adjusted and the Railroad Administration will be carried as a bureau of the Treasury Department to conclude the remaining liquidation work, involving claims of third persons. Mr. Davis, who has been director general since March 28, 1921, plans to engage in the general practice of law at Des Moines, Ia., and will represent the Chicago & Northwestern, of which he was formerly general solicitor, in the state of Iowa. In a letter accepting Mr. Davis' resignation President Coolidge said:

"The liquidation of the controversies growing out of federal control of the railroads has been substantially completed in a most satisfactory manner, due to your energy, ability and tact. Therefore, I cannot well ask you to remain longer at your post. When one contemplates the extent of the work accomplished under your direction, he feels that the thanks of the country should be extended to you in most generous measure. Instead of endless litigation, as prophesied by many, we have seen such adjustments of the claims between the railroads and the government, growing out of our handling of these vast properties during the war, as to bring about satisfactory settlements out of court. The claims of the railroads against the government, amounting to over one billion of dollars, were adjusted for less than \$244,000,000. Our claims against the carriers, amounting to approximately \$440,000,000, resulted in our collection of nearly \$200,000,000. The net result is that the claims against the government have been liquidated on a basis of less than five per cent. All through these operations, you have preserved cordial relations with the railway executives obtaining their generous

co-operation and helping to establish an era of good feeling between the government and the carriers, which are so vital a factor in the nation's life."

President Coolidge also wrote to Mr. Davis the following letter of appreciation:

"It would be unfair both to the public service and to a public servant who has performed a particularly efficient, able and difficult task, if I should omit to make acknowledgment to you of my strong conviction regarding your conduct of the Railway Administration.

"I am informed, and believe, that the task of examining, determining and liquidating the enormous mass of claims that have grown out of the war-time relations between the government and the railroads was probably the greatest of its sort in the experience of this country, perhaps of the world. I recall that it was almost universally prophesied that this work could not be performed without developing a maze of controversy and litigation, expensive to all parties, and likely to postpone final settlements for many years. Under your direction, all these uncomfortable anticipations have been dissipated, and you now approach the completion of your task with remarkable record of having made these settlements practically without any resort to litigation.

"So remarkable a showing entitles you to the heartiest congratulations and, in extending them to you, I must add a word of recognition for the attitude which the railroad executives have taken. To their liberal disposition is, of course, due a large measure of credit for this series of settlements. I believe the accomplishment thus effected marks a new epoch in relations between the government and the carriers; an epoch in which we will see constantly better understanding and improved relationship.

"Because I strongly feel that you have contributed much to making this possible, I extend my heartiest felicitations."

In the adjustment of the claims of carriers whose property was taken over the creditor roads were paid \$243,652,196.91, and there was collected from the debtor roads \$195,272,295.17. The balance paid by the government was \$48,379,901.74. The adjustment was made without litigation, and well within the appropriation originally made by Congress for this purpose. As an outgrowth of federal control, the government took definitive obligations of the railroads, for advances, funding of additions and betterments, balance due on settlement, and the like, aggregating \$629,241,250. Of this amount there has been collected, or disposed of at par, \$495,705,450.00. This amount has been returned to the United States Treasury.

The Railroad Administration for a number of years has been returning large sums to the Treasury. For the eleven months ended November 30, 1925, the receipts in excess of expenditures were \$50,690,499.00. The liquidation of the claims of the railroads, now completed, represents perhaps the largest liquidation of a single commercial interest ever undertaken. The Railroad Administration has cash assets, in the shape of unexpended appropriations and other funds, aggregating \$101,504,972.84, and still holds carrier obligations in the sum of \$133,535,800.00.

Aside from the claims of the railroads for the use of their property, there were innumerable claims of third persons for freight overcharge, reparation, loss and damage, personal injuries, fires, and the like, while the Railroad Administration, on its part, had many claims for demurrage and undercharges. In the neighborhood of fifty thousand law suits were instituted against the Railroad Administration growing out of these transactions. The greater portion of these outside claims have been adjusted, and the entire liquidation is being rapidly

concluded. The income of the Railroad Administration, from interest on railroad obligations, is largely in excess of an amount sufficient to finally conclude this adjustment.

The total cost to the government of federal control, including the operating losses during that period and the six-months guaranty period after federal control, and the payment to deficit short lines will aggregate some \$1,696,000,000.00.

## I. C. C. Reports on Valuation\*

**D**URING the year our valuation activities have been devoted almost exclusively to steam railroads. Two main objects have been kept steadily in view, the first being the completion of the initial or primary valuations as of dates of inventory varying from 1914 to 1921, and the second consisting of the policing of the returns of carriers to our valuation order No. 3, giving additions, betterments and retirements since dates of primary valuation in order to facilitate the bringing of the primary valuations to a current date. The following table shows the number and scope of underlying reports completed as of October 31, 1925, compared with October 31, 1924:

Section	October 31 of year—	Number of reports	Number of corporations	Miles of road <sup>1</sup>	Per cent of total mileage <sup>2</sup>
Accounting .....	1924	1,034	1,707	243,605	99.70
Accounting .....	1925	1,073	1,750	244,247	99.94
Engineering .....	1924	953	1,610	235,088	96.20
Engineering .....	1925	1,040	1,742	243,042	99.45
Land .....	1924	1,106	1,672	233,247	95.40
Land .....	1925	1,123	1,764	244,045	99.86

<sup>1</sup>Miles of first main and branch lines, no duplication for second or other main track or sidings.

<sup>2</sup>On the basis of 244,377 miles.

Similar information as to tentative valuation reports served is shown in the following table:

TENTATIVE VALUATIONS				
October 31 of year—	Number of reports	Number of corporations	Miles of road	Per cent of total mileage
1924 .....	386	568	75,375	30.84
1925 .....	657	981	125,758	51.46

It will be observed that we now have completed as of the respective valuation dates the preliminary underlying reports on practically all of the steam railroads in the United States. Of the underlying reports shown above as completed on October 31, 1925, 63 per cent of the accounting reports, 70 per cent of the engineering reports, and 64 per cent of the land reports have been corrected and made final for use in preparing tentative valuation reports. Tentative valuation reports have been issued on more than half of the carriers and mileage. Work on the remaining carriers and mileage is well advanced.

Hearings on protests against tentative valuations were concluded during the year in 62 cases, embracing 25,784 miles of road, or 10.6 per cent of the total mileage, bringing the total number of cases in which hearings have been completed up to 212, covering 43,600 miles or 17.9 per cent of the total. Sixty-four cases, representing 26,469 miles, have been partly heard.

During the year 53 final value reports, covering 4,929 miles of road, were issued, the total number of reports and miles being thus brought to 88 and 9,325 or 3.8 per cent of the total mileage. In addition, 86 tentative valuation reports covering 1,733 miles of road have become final through lack of protest. The total number of such cases is now 225 and the mileage 5,379, being 2.2 per cent of the total mileage. In 30 such cases, covering 1,282 miles of road, we have issued formal reports declaring the

\*Abstracted from the Thirty-ninth Annual Report of the Interstate Commerce Commission.

valuations final by operation of law, and these are included in the 88 cases above shown. Reports are now final on 5.5 per cent of the entire mileage of the country.

Valuation Order No. 3 requires carriers to keep a record of additions, betterments, and retirements made subsequent to the date of the primary valuation; to render annual reports to us showing, by primary accounts, the cost of such property; and to report the units of property installed and retired at such times and for such periods as we may request. During the year the force assigned to the administration of this order averaged 54 persons. Of this number an average of 29 were assigned to policing and checking the carriers' records in the field.

Field examinations have been completed on 75 operating systems, aggregating 50,000 miles of road. These examinations covered an average period of seven years subsequent to the various dates of valuation. Preliminary examinations for the purpose of ascertaining the general condition of the carriers' records had been made at the offices of 100 companies.

In our last report we indicated our intention to test the possibilities of a plan of formal conferences between our technical representatives and the technical representatives of the parties to the case as a substitute, in part, for ordinary trial procedure in the taking of evidence at hearings on protests against tentative valuation reports. Two properties, the Santa Fe and the Panhandle-Vandalia, were at first selected for the test, and later a number of others were added. The tests have convinced us that the conference plan furnishes a better approach and a superior method of arriving at the determination of many complicated issues in valuation cases.

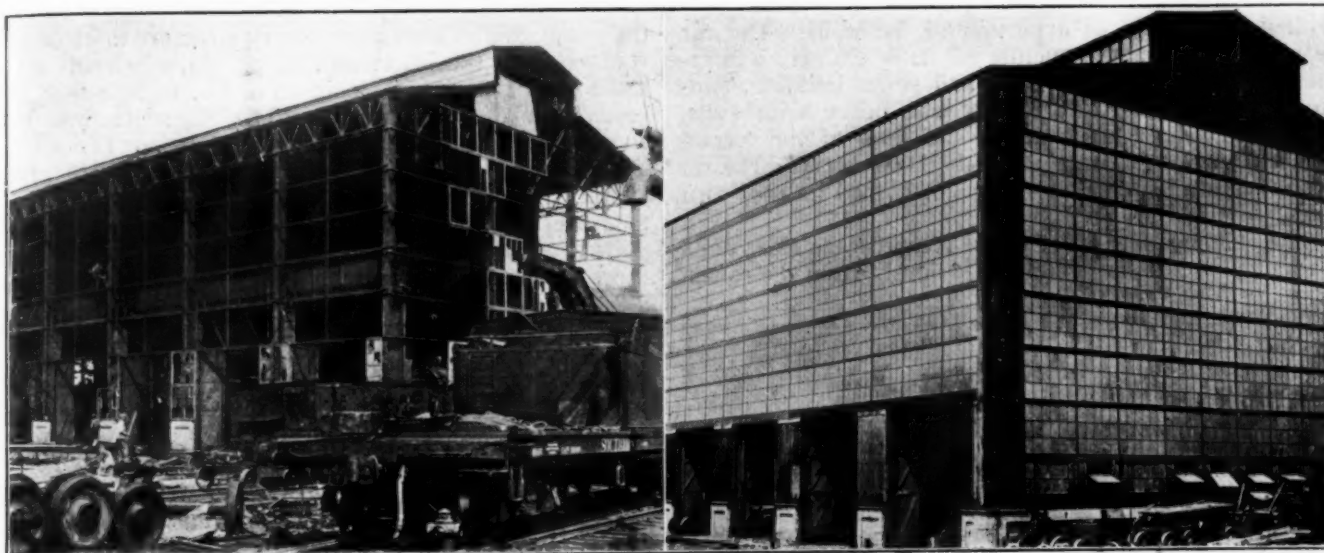
In proceedings for the recapture of excess earnings under the provisions of Section 15a of the act hearings were held and completed in 18 cases covering 1,052 miles. Seventeen cases, covering 2,599 miles, have been partly heard, and seven cases, representing 886 miles, are now set for hearing in the near future. Our valuation forces have prepared and presented the valuation data in these proceedings, revising and correcting the reports as of the original dates of valuation of the properties concerned to bring them down to the recapture periods, all of which are subsequent to the dates of the primary valuations.

The independent offices appropriation bill for the fiscal year 1926, approved by the President on March 3, 1925, carried a substantial increase for our valuation activities, designed mainly to enable us to enter upon a program for the completion of primary valuations of steam, sleeping-car and telegraph carriers within a period of three years beginning July 1, 1925.

We took up at once the matter of recruiting with the object in view of securing by July 1, 1925, the full complement of men required for the first of the three years. Despite the full co-operation of the Civil Service Commission, we were unable to secure by that date more than one-third of the additional employees provided for. We are experiencing especial trouble in employing, at salaries that we are able to offer in government service, engineers for the more important assignments. The recruiting work is still being diligently pursued.

The full effect of the increase in the organization is not yet reflected in the output of reports, since many of the new men are still undergoing a course of preliminary training. We have entered upon a heavy program of hearings in 98 cases, covering 32,499 miles and including the Santa Fe, the Southern, the Frisco, the Michigan Central, the Chesapeake & Ohio, the Grank Trunk, the Long Island, the Louisville & Nashville, the International-Great Northern, the Minneapolis, St. Paul & Sault Ste Marie, the Central of New Jersey and the Gulf Coast lines.





*The Erecting Shop Shortly After the Storm and as it Appeared with Repairs Completed*

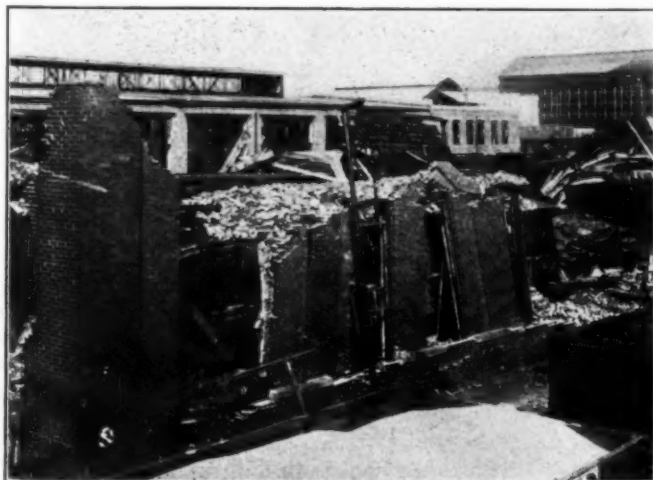
## Locomotive Facilities Rebuilt in Record Time

*Engine terminal and shops at Princeton, Ind., destroyed by  
tornado were restored in 98 days*

**T**HE fearful damage wrought in eastern Missouri, southern Illinois and southeastern Indiana by the tornado on the afternoon of March 18, 1925, in which the railroads were not the least among the sufferers,

the limits of the plant which did not suffer some damage, while several of the buildings were reduced to piles of broken building material. The extent of the damage is indicated on the terminal plan, wherein one indication is used to show buildings entirely or almost entirely destroyed and another to indicate buildings which suffered more or less serious injury.

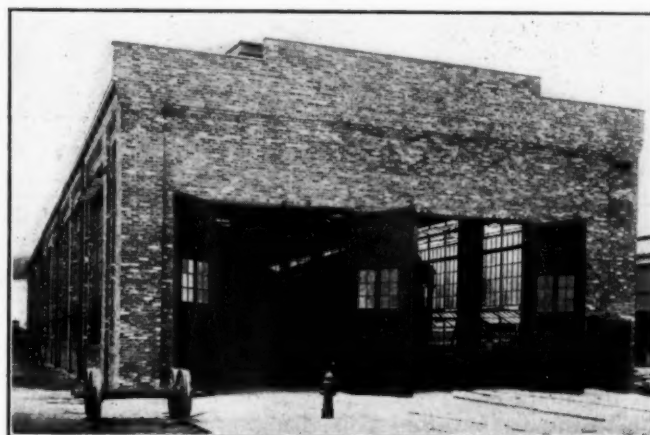
The roundhouse was so badly wrecked as to require complete rebuilding. The coach and paint shop, 40 ft. by



**Only a Small Portion of the Walls of the Coach Shop  
Remained Standing**

will be long remembered. But no less worthy of definite record is the story of the restoration and reconstruction of the engine terminal and repair plant of the Southern at Princeton, Ind., which were rebuilt by Dwight P. Robinson & Co. in 98 days from the time the storm reduced it to a veritable wreck.

It would appear that the path of this tornado blanketed the entire layout for there was scarcely a structure within



**The New Coach Shop, Showing How Salvaged Brick Was  
Used in Reconstruction**

183 ft., and the blacksmith shop, 70 ft. by 100 ft., both of them brick buildings with gable roofs supported by wood roof trusses, were blown down, only a few portions of the walls remaining standing. The paint store building, 42 ft. by 52 ft., of similar construction, was destroyed

with the exception of a portion of the walls. The car repair shed, a frame structure 82 ft. by 262 ft., was reduced to kindling. The office and stores building, two-story structure 35 ft. by 160 ft., with heavy brick walls, was completely wrecked above the level of the second floor and seriously damaged in the lower story. The tin shop, a brick building 26 ft. by 76 ft., had its roof torn off.

The buildings mentioned above comprise the older units of the layout that suffered most seriously from the storm.

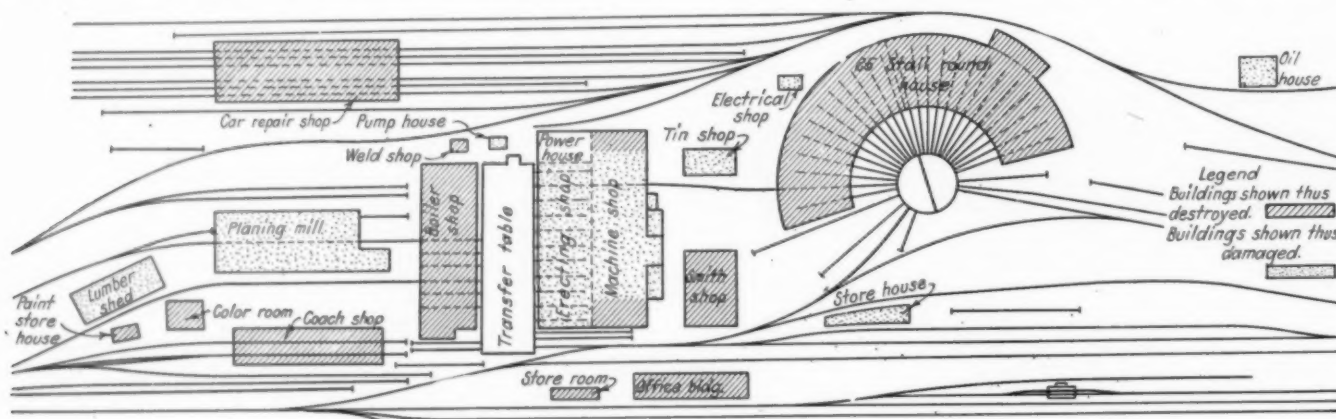


All That Was Left of the Boiler Shop After the Storm

Two newer buildings, the planing mill, 88 ft. by 204 ft., and the locomotive erecting shop, 82 ft. by 264 ft., steel frame structures with metal sash, remained standing, the damage being confined largely to the windows. In some cases the metal sash was blown out completely or badly bent. In other cases only the glass was destroyed. In the machine shop, an older structure adjoining the erect-

ing shop, and to erect a temporary structure to house the equipment of the blacksmith shop. Arrangements were made with Dwight P. Robinson & Co. to take over the restoration of the terminal. The superintendent and supervising engineer of that organization arrived in Princeton on March 23 and on March 25 were given definite authority to proceed with the reconstruction and take over the forces at work clearing up the debris, this portion of the work being completed in about a week. In the meantime, such repairs as were necessary had been made to permit the railroad to resume the operation of the machine and erecting shops, as well as the planing mill. By April 1 Dwight P. Robinson & Co. had completed their organization for the reconstruction of the buildings which had been entirely destroyed, a field office was erected and an engineering staff had commenced the preparation of working drawings, which were necessary because most of the buildings that had been destroyed were 25 or more years old and no drawings were available. In the meantime the contractor's men were restoring the smaller buildings, such as the oilhouse, electric repair shop, tin shop, toilet buildings, pumphouse and dry lumber shed, for which little or no drawing work had been necessary.

The first building to be rebuilt was the blacksmith shop, new walls being erected on the old foundation. The principal change in design was to install a flat roof on steel trusses in place of the gable roof with wooden trusses. The second building to undergo reconstruction was the roundhouse. The old structure had 70-ft. stalls and in rebuilding it the depth was increased to 100 ft., necessitating the construction of a new backwall foundation, in addition to the rebuilding of the entire superstructure. Seventeen of the 25 stalls had their engine pits extended from 50 ft. to 70 ft., while in the other eight stalls new pits were built. In addition a driver pit, a pony truck drop pit and a trailer drop pit were installed. The roundhouse as rebuilt has brick walls with wooden frame



A Map of the Car and Locomotive Facilities at Princeton, Showing the Extent of the Damage Done by the Tornado

ing shop and having steel roof trusses on brick bearing walls, the damage was limited primarily to the two ends. At the south end  $1\frac{1}{2}$  bays of the brick wall were blown down, leaving one roof truss hanging in the air with a cantilever span of 70 ft. At the north end the end wall was knocked out and one bay of the roof was destroyed. Other buildings suffering damage of a minor nature were the pumphouse, oilhouse, electric shop, dry lumber shed and several toilet buildings.

The railroad company's forces were organized immediately after the storm to clear the main track through the terminal, to clean up the wreck of the roundhouse so as to release the locomotives which were in it at the time of

and a wooden sheathed roof with built-up asphalt and felt roofing.

The coach paint shop was widened 10 ft. and lengthened 30 ft. in reconstruction, thus making it 50 ft. by 213 ft. in plan. This change required a new foundation for the entire length of one side, as well as a new floor and floor drainage. Other changes made in the reconstruction included the substitution of a flat roof supported on steel trusses in place of the gable roof with wooden trusses, as well as provision for larger window areas equipped with steel sash. Work on the storehouse and office building was started directly after undertaking work on the coach paint shop.



The rebuilding of the boiler shop also embodied a number of changes from the original design. The windows were made much larger than in the old structure and were provided with metal sash, the roof was supported on steel roof trusses and columns were provided to support the runway for a 15-ton crane. The indirect radiation hot air system employed in the old building was not damaged by



The Roundhouse Was Entirely Rebuilt

the storm except for the destruction of the distributing ducts, which were replaced in the new structure.

The freight car repair shop was the last structure to be rebuilt and since the old building was entirely destroyed this entailed provision for an entirely new structure. This is a frame building with three rows of columns, one in each side wall and one in the center. The roof is of flat construction with wooden monitors in every other bay. The sash and doors are of wood. The planing mill had

and other electrical facilities. The roundhouse was provided with an electric welding circuit, while the coach paint shop was provided with compressed air and steam piping for testing car heating equipment.

All of the construction work had to be carried out with a minimum of interference with the operation of the plant. The only departments which were out of operation were the coach paint shop and the storehouse and office building. In the roundhouse, for example, construction was carried on with many of the stall tracks in use for making locomotive running repairs. The planing mill, boiler shop, erecting and machine shop were operated during the entire time that rebuilding was in progress. The boiler repairs were carried on in the open until a roof could be placed on the structure.

A large part of the old timber was salvaged and re-sawed in the planing mill and used in various parts of the work. A large amount of brick was salvaged and reused. This fact, together with a reduction in the thickness of walls, limited the purchase of new brick to 75,000. New lumber was provided by the railway company in accordance with lists forwarded to the purchasing agent. Orders for steel sash were placed as rapidly as possible and this was expedited by having the various steel sash manufacturers send representatives to Princeton, where orders were placed with them direct. Structural steel work was largely purchased in Evansville, Ind., only 25 miles from Princeton. Considerable material was also purchased at St. Louis. All work was completed on June 24, that is, 98 days after the storm or 93 days after the Dwight P. Robinson men had arrived on the job.

The entire work of reconstruction, including detail plans, except the locomotive coaling plant, was carried out



The Old Blacksmith Shop Was Reduced to Piles of Wreckage

been warped or distorted by the storm and had to be straightened up. The windows were reglazed and about half of the roof had to be replaced, the new roof consisting of gypsum block roofing with a waterproof roof covering. In the paint storage building reconstruction involved the replacing of a portion of the walls which had been knocked down and the construction of a new roof. Repairs to the machine shop included the replacing of the two end walls, the restoration of the roofing at each end and considerable glazing. The rehabilitation of the erecting shop involved reglazing and the replacement of a large amount of window sash. New steel sash were provided for the entire length of the west side and at the south end and new wooden sash were installed in the monitor, in the east clere-story and at the north end of the building.

In all the buildings requiring extensive reconstruction the work included provision for effective electric lighting

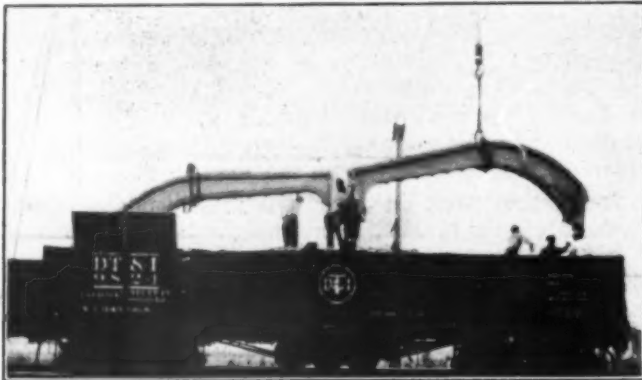
by Dwight P. Robinson & Co. All work was done under the direction and supervision of H. W. Miller, vice president of the Southern Railway, and B. Herman, chief engineer.



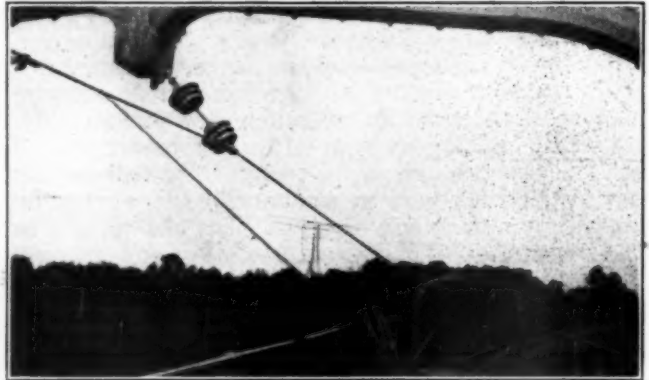
A Baltimore & Ohio "Camel-Back," Newark, Ohio, A. D. 1874



Arrangement of Supporting Structure on Four-Track Section



Bolting Together the Two Halves of an Arch



View of Catenary on Curve from Top of Construction Car



Train Used by Wiring Crew—Guard Railings on Platforms Are Down to Clear Contact Wire Upon Entering



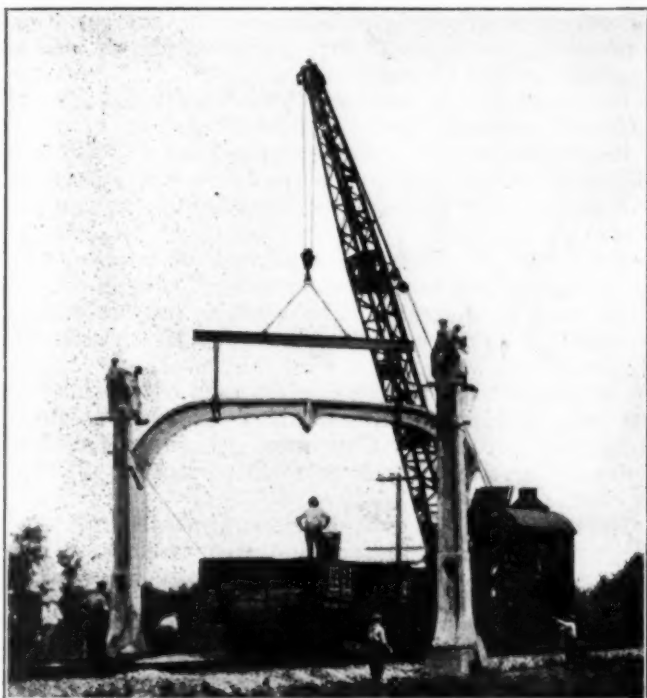
# D. T. & I. Overhead Contact System

*Reinforced concrete arches are used to support 23,000-volt  
non-ferrous simple catenary*

**O**VERHEAD construction for the electrification of the Detroit, Toledo & Ironton has now been placed on the 17 miles of line from Fordson, Mich., to Flat Rock, Mich. The supporting structure is unique in design and consists essentially of precast reinforced concrete members, bolted together and supported on concrete foundations.

## Catenary Supporting Structure

On double track line the supporting structure consists of two columns and two half-arches. Arches which span



Double Track Arch Being Raised to Position on Top of Columns

three or more tracks are lengthened by the addition of a filler member placed between the two half arches.

Reinforcing steel in the members is arc welded to special castings used at the ends of the members and the concrete is tamped after it is placed in the molds. After setting for 24 hours the members are placed in steam at a temperature of from 90 to 130 degrees for another 24 hours and then placed in drying ovens at the same temperature for a similar period. From the drying ovens the units are seasoned in storage racks for 18 days before they are set up. Each half arch contains one cubic yard of concrete and weighs 4,150 pounds. Each column averages  $2\frac{1}{2}$  cubic yards of concrete and weighs 11,167 lb.

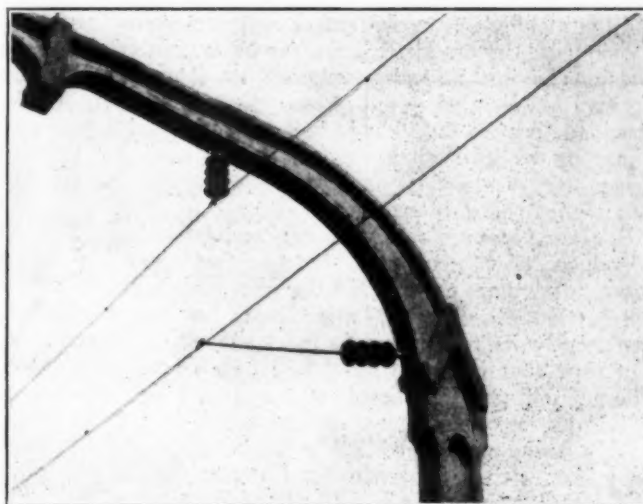
Pits for the foundations are dug 10 ft. long by 8 ft. wide and 8 ft. deep. Forms are placed in these pits. When the forms are filled they contain about 3.8 cubic yards of concrete and weigh approximately 15,000 lb. each. Thus a completed trolley arch, including two half-arches, two columns, two small caps and two foundation posts, totals about 60,650 lb.

Wherever there is contact between metals, as at the points where half-arches and columns are joined by bolting together the bare steel end plates, a coating of tar pitch is first applied to exclude moisture and consequent corrosion. Grout is employed to fill the 2-in. spaces left at the trolley tower bases and is also applied over all other joints, concealing the bolts and nuts and making completely covered concrete structures.

## Grounding

The steel in each arch is grounded by a  $1\frac{1}{2}$ -in. galvanized iron pipe which is driven down 8 ft. below the bottom of the foundation pit. A bronze cable with a terminal on each end is used to connect the pipe with one of the six 2-in. anchor bolts, 36 in. in length which are used to secure the column to the foundation.

The contact wire is a 4/0 bronze wire supported by a simple catenary. The catenary or messenger is  $\frac{1}{2}$ -in. seven-strand bronze wire. The supporting arches are spaced 300 ft. apart and the messenger wire is supported from the arches by porcelain insulators having a dry flashover voltage of 320,000 volts. The insulators are fastened to yokes built into the arches. The contact wire is hung from the messenger by bronze hangers spaced 15 ft. apart. When the wire is strung the messenger is given a tension of about 3,000 lb. and the contact wire a tension of 2,000 lb. by means of a dynamometer.



Type of Catenary Used on Tangent Track

On tangent track insulated steady braces mounted on the side of the arches and secured to the contact wire keep it from swinging. On curves inclined hangers are used to support the contact wire and the insulators which hold the messenger are offset toward the inner side of the curve and hung from special castings. The castings are provided with a number of holes which allow the insulator to be adjusted to exactly the correct position.

The three-wire feeder system of power supply will be used. The feeder wire will consist of  $\frac{1}{2}$ -in. stranded copper mounted on pin type insulators located on the center of each arch. This feeder is connected to the contact wire through auto transformers in such a way

that the difference of potential between the feeder and contact wire is 46,000 volts and the contact wire potential to ground is 23,000 volts. This method of feeding energy to a train minimizes inductive interference by causing current to come to the train from opposite directions. This effect is still further aided by the extremely high voltage and correspondingly low values of current used.

With this system of feeders the running rails are a grounded neutral connection to the auto transformers. The rails are bonded with short "L" head copper bonds.

## Railroad Bills in Congress

WASHINGTON, D. C.

**M**OST of the railroad bills thus far introduced in Congress since the new session opened represent those which had been introduced at the last or previous sessions and were not acted upon. Senator Cummins is expected to introduce before the adjournment for the holidays on December 22 his new consolidation bill and introduced by request the bill drafted by the committee of the National Association of Railway and Utilities Commissioners to provide for regulation of common carrier motor vehicles by state commissions as agents of the Interstate Commerce Commission.

Senator Smith of South Carolina has introduced a bill, born of the agitation for the appointment of a member of the Interstate Commerce Commission from the South, which provides that the commission shall consist of 12 members, instead of 11 as at present, and that three shall be chosen from each of four districts, the northeastern, the southeastern, the northwestern and the southwestern. The bill, S. 1547, provides that the terms of the present commissioners shall expire as heretofore provided by law but that, in order to procure, as soon as practicable, the appointment of three representatives from each district or division, successors shall hereafter be appointed from the division having no representation or from the division having the least number of representatives. It is also provided that no individual shall be appointed a commissioner unless he shall have been for at least six years a citizen and resident of a state included within the division from which he was appointed.

Senator Gooding's new fourth section bill, S. 575, as introduced on December 8, represents considerable toning down as compared with the bill which he introduced at the last session, which passed the Senate but not the House. Apparently it is designed to meet the objection made at that time that it would disturb the entire rate structure. The new bill provides simply that section 4 be amended by adding thereto a new paragraph as follows:

"No common carrier shall be authorized to charge less for a longer than for a shorter distance for the transportation of passengers or of a like kind of property, over the same line or route in the same direction, the shorter being included within the longer distance, on account of water competition either actual or potential or direct or indirect: *Provided*, that such authorizations, on account of water competition, as may be lawfully in effect on December 7, 1925, shall not be required to be changed except upon the further order of the commission: *And provided further*, That the provisions of this paragraph shall not apply to rates on import and export traffic, including traffic coming from or destined to a possession or dependency of the United States."

Representative Hoch of Kansas, who has introduced a similar bill, H.R. 3857, has issued a statement in which he says that "The new bill narrows the issue and seeks merely to prevent the railways from using water competition as a basis hereafter for departure from the long and short haul rule. It would not affect departures based on

other grounds, and therefore, would not disturb the rate structure, as opponents of the Gooding bill claimed it would have done. Such departures as are now in effect based on water competition are left for adjustment in an orderly way as the commission may decide, but no further ones are to be granted."

Senator Harris of Georgia re-introduced his bill of last session to prohibit the use of wooden passenger cars between or in front of steel cars.

Senator Robinson of Arkansas re-introduced his bill to provide that express and baggage cars shall be of such construction as may be required by the Interstate Commerce Commission, also his bill to prohibit a Pullman surcharge.

Senator Sheppard of Texas introduced a bill to amend the bill of lading provisions of the present law.

Representative Jones introduced a bill to require certificates of public convenience and necessity from the Interstate Commerce Commission for new lines of railroad only when they cross state lines.

Representative Kelly introduced a bill to provide that all cars used for railway postoffice service shall be of steel construction and furnished in such manner as may be required by the Postmaster General.

Representative McLaughlin introduced a bill to prohibit a Pullman surcharge.

Representative Shallenberger introduced a bill to prohibit fourth section relief on account of water competition.

Representative Hudson also introduced a fourth section bill.

Representative Colton re-introduced, by request, a bill to "establish uniform car rates and class rates for the transportation of freight," also a bill to provide that the Interstate Commerce Commission's plan of consolidation shall not provide for the consolidation of the railway properties of two or more carriers each of which enters the port of Chicago, Boston, New York, Philadelphia, Baltimore, Norfolk, Charleston, Jacksonville, New Orleans, Galveston, Los Angeles, San Francisco, Portland or Seattle.

Representative Hudson introduced a bill to provide that the requirements for a certificate of public convenience and necessity for building a new railroad line shall not apply where all of the line is within a state.

The member roads of the Association of Railway Executives at a meeting on Chicago on December 21 will consider a draft of a proposed bill, on which a special committee representing the railroads has been working with representatives of the railroad labor organizations, in an effort to provide for a method of settling railroad labor disputes as a substitute for the present railroad labor law and also for the Howell-Barkley bill, which the unions attempted to put through Congress at the last session. This is the proposed legislation to which President Coolidge referred in his message to Congress when he said he had been informed that the railroad managers and their employees had reached a "substantial agreement." Its details have not been made public.

The letter to the Senate committee on interstate commerce, mentioned in the annual report of the Interstate Commerce Commission, in which the commission recommended a change in the consolidation law to omit the requirement of a general plan, states that Commissioners Hall, Esch and Cox did not join in the recommendations with respect to legislation and that Commissioner Potter did not participate. The letter also said that: "Carriers, already desirous of effecting consolidation have, through their counsel, voiced a need which they feel for setting up some federal machinery for corporate action incidental to consolidations under the federal statute," but that "we have made no investigation and express no views with respect to this matter."



## Commission Transfers Investigation of C. M. & St. P.

**I**F the population had increased, following the construction of the extension of the Chicago, Milwaukee & St. Paul to Puget Sound, at the same rate as previous to its construction, there would not have been a receivership, according to William A. Hayes, an attorney at Milwaukee, Wis., who testified as a stockholder at the hearing before Commissioner Cox of the Interstate Commerce Commission in connection with the investigation of the Chicago, Milwaukee & St. Paul, which opened at the Great Northern hotel, Chicago, on December 15. When the coast extension was projected, according to Mr. Hayes, its construction was warranted by the prospects for an increase in population and industries within the territory served by the then existing lines of the company west of the Twin Cities and the territory served by the extension. The failure of this development to materialize contributed to the financial conditions which made the receivership necessary. Mr. Hayes believed further that a resumption of growth in population and industry in Minnesota, North and South Dakota, Montana, Idaho and Washington will again appear under proper corrective measures, among which he suggested helpful publicity, soil surveys, soil analysis, crop adaptation, crop rotation, stock raising, dairying, co-operative marketing, settlement by European immigrants and more opportunity for co-operation with the communities by the roads traversing the region.

When cross-examined as to methods to be employed to bring about successful operation of the road in the future, Mr. Hayes urged the co-ordination of railroad service with motor bus and motor truck service and the establishment of store-door delivery. When asked about the condition of the farmers he stated that if the farm products of the Dakotas had been carried to market free it could not have materially benefited the farmer.

C. H. Dietrich, freight claim agent of the St. Paul, outlined the methods that have been employed in his department to cut down the expenses of operation caused by claim payments. As examples of the efforts of the freight claim department to decrease this account, he called attention to the adoption of improved methods for watering and feeding live stock en route which have cut down claims from this class of traffic and the co-operation of the car department to prevent the leakage of grain from cars. He also stated that there had been a material reduction in the forces of the claim department during the past two years which has also cut the cost of settling claims.

L. K. Sillcox, general superintendent of motor power, testified regarding the efforts his department has made to reduce operating costs. The number of employees in the mechanical department was reduced from a monthly average of 20,000 in 1920 to less than 18,000 on January 1, 1925, while the cost of back-shop repairs has been reduced more than half since 1920. In addition there was an improvement in the condition of power and an increase in the number of units available for service. In 1918 the number of locomotive failures was 6,144 while in 1924 the number had been reduced to 856. During the same period the number of miles between failures had increased from 8,250 to 60,543. He also showed that the fuel consumption had shown a marked improvement.

No new passenger equipment has been purchased for more than 10 years except 18 baggage cars bought in 1919 which has made it necessary to incur heavy expenses to maintain them. In spite of this fact the cost of maintenance of passenger cars declined from \$2,235 per car in 1918, to \$2,167 in 1924, while the average cost per car mile decreased from 3.79 cents in 1918 to 3.41 cents in

1924 and the average miles run per car increased from 40,000 to 63,601.

In discussing the cost of maintenance of freight cars he compared the figures on the St. Paul with that of other roads, showing that the cost per freight car mile on the St. Paul was 2.21 cents in 1919, while in 1924 it was 1.2 cents as compared with 1.43 cents on the North Western, 1.4 cents on the Burlington, 1.22 cents on the Great Northern and 1.5 cents on the Northern Pacific.

## New Jersey Report on Monmouth Junction Collision

**J**AMES MAYBURY, JR., chief of the Bureau of Railroads of the Board of Public Utility Commissioners of New Jersey has made a report on the rear collision of passenger trains on the Pennsylvania Railroad, between Plainsboro and Monmouth Junction, on November 12, when ten persons were killed and 35 injured. This collision was reported in the *Railway Age* of November 21, page 946. The present report describes the road, the signals, the trains and all circumstances in much detail. At Princeton Junction, train No. 162 passed at 5:40 a. m.; No. 166 at 5:44 and No. 6 at 5:52; estimated time of collision 5:56. The flagman of No. 166 did not get off the train when it was stopped at signal 440, (the engineman immediately sounded the whistle to proceed) but he threw off a lighted fusee, which, however, was burnt out before No. 6 reached it. Train No. 166, moving at reduced speed, had traveled about 2,000 ft. east of signal 440 when it was stopped by a fusee which had been placed by the flagman of No. 162. The fireman of 166 got off and picked up this fusee and returned to his engine. The flagman of 166, when his train was stopped, threw off a lighted fusee at a point 871 ft. east of signal 440. No. 166 then started and was moving at about ten miles an hour when it was struck.

Engineman Carroll of No. 6 said that after passing the water trough, west of signal 458, where he had scooped water, he started the injector; and the inspector thinks that while passing signal No. 448 Carroll was busy with the injector and thus missed the signal. The inspector estimates that, because of the dense fog, Carroll had only two seconds in which to see this signal. Carroll saw the fusee 871 ft. east of signal 440, as did his fireman, and immediately thereafter saw the tail end of No. 166. The point of collision was 1,859 ft. east of signal 440; but the trains moved forward 287 ft. further before stopping.

Judging by the condition of the cars and locomotive, the inspector estimates the speed of No. 6 at the moment of collision at between 30 and 40 m.p.h. He concludes that the brakes were not applied in emergency promptly after signal 440 was sighted.

Considering the fog and the fact that No. 166 had fallen back to the schedule of No. 6, Rule 99 would require the flagman of 166 to protect his train by going back "a sufficient distance to insure full protection and placing two torpedoes on the rail." This was not done; although a fusee was thrown off.

The report says that the safety of train operation depends primarily on observations of the automatic block signals by the engineman and calls flag protection an auxiliary. No protection was afforded by the fusee west of signal 440, the flare lasting only five minutes, which is the maximum of fusees in use on the Pennsylvania Railroad. If the flagman of No. 166 had placed torpedoes, as required by the rule, it would have delayed the train a few seconds but undoubtedly would have averted the accident; for engineman Carroll would in all proba-

bility have immediately applied the brakes. "The flagman of 166 could have gone back when his train was stopped for signal 440" and the report says that "the rule should provide explicitly that when a train stops, in foggy weather, other than at a station, torpedoes must be used in addition to fuseses."

To provide against "human failures" as in this case "a system of automatic train control is apparently desirable, for safe operation." The installation of automatic train control is within the jurisdiction of the I. C. C. which commission has ordered installations on certain roads; it is recommended, therefore, that due consideration be given to the installation of automatic train control on the New York division of the Pennsylvania.

## To Regulate Highway Transport

**A** BILL drafted by the National Association of Railway and Utilities Commissioners to provide for the regulation of interstate commerce by motor vehicles operating as common carriers on the public highways has been introduced in Congress by Senator Cummins at the request of the state commissioners. It is understood that the bill is approved in principle by representatives of the railroads and also by the American Automobile Association.

The bill provides that the state commissions having regulatory authority over the railways shall have authority to enforce the provisions of the act within the states or in certain cases in co-operation with the commissions of other states or with the Interstate Commerce Commission. The provision is made that a period of 60 days shall be allowed the state commissions in which to accept the authority provided in the bill.

The bill provides that no motor carrier shall engage in the transportation as a common carrier of persons or property by motor vehicle in interstate commerce on any public highway in any state without having first obtained from the state or national commission, whichever may be in authority, a certificate declaring that the public convenience and necessity requires its operation. Motor carriers in operation at the time the act may become effective will be allowed 90 days from that date in which to file applications for certificates covering such operations.

Applications for certificates of convenience and necessity must state among other things the public highways over which the operator proposes to do business, the fixed termini which he proposes to have, and the names of common carriers regularly operating over the route or between such termini. Copies would be sent to interested

railroads. Motor carriers which do not propose to engage in transportation between fixed termini and over regular routes will be required to state the localities or districts in which they wish to operate, and the character of operations to be conducted. Other information required in the application provides a statement of the kind of transportation proposed with a full description of the vehicles to be used, describing them as to width and length, the kind of tires, the weight and seating capacity in the case of passenger vehicles, and the weight and tonnage capacity of freight vehicles, a statement showing the assets and liabilities of the applicant, etc. These applications will be filed with the state commission unless the state commission has not agreed to assume authority under the bill, in which event the application will go direct to the Interstate Commerce Commission. Public hearings for arguing such applications are required.

The bill provides that in granting a certificate of public convenience and necessity, the commission hearing the application of a highway carrier must give reasonable consideration to the available transportation service by railroad or other existing transportation agencies, to the character of service to be rendered by the applicant, to the likelihood of the proposed service being adequate, permanent and continuous, and to the effect which such service may have upon any other transportation agency, the continued operation of which is important to the communities.

The bill also provides for the filing of bonds by applicant motor carriers and also specifies that rates must be filed with the commission, either state or national, and that these rates cannot be changed except after 30 days' notice without the approval of the commission having jurisdiction. The same regulation as applied to the railways would affect motor carriers insofar as giving free tickets or passes is concerned. The commissions are also given authority to suspend rates or change them as circumstances require. The bill provides for the preparation by the commissions of uniform systems of accounts.

In brief the commissions would be charged with the supervision and regulation of motor carriers operating under certificates which they issue, requiring reasonably continuous and adequate service at reasonable rates, and prescribing rules and regulations by general order or otherwise applicable to motor carriers.

The bill provides for joint action of state commissions with rights for appeal to the Interstate Commerce Commission for final ruling.

Referring to taxation, the bill provides that "Any state may impose the same taxes or other charges on motor carriers engaged in interstate commerce for the use of the public highways in such state as it imposes on motor carriers engaged solely in intrastate commerce in such state."



Fruit Delivery Yard of the Erie Railroad, Jersey City, New Jersey



## General News Department

The executive committee of the Roadmasters' and Maintenance of Way Association, at a meeting in Chicago on December 12, decided to hold the next annual meeting in the Auditorium hotel, Chicago, on September 21, 22 and 23.

The New York, Chicago & St. Louis has petitioned the Interstate Commerce Commission for a further extension of time, from January 1, 1926, to July 18, 1926, in which to complete the automatic train control installation required by the commission's order of June 13, 1922.

Edward D. Levy, formerly first vice-president of the St. Louis-San Francisco, who left railway service in February, 1918, to enter the service of the Emergency Fleet Corporation, and who has been more recently president of the International Products Company, New York, has been elected president of the Pierce Petroleum Corporation. His headquarters will be at St. Louis, Mo.

The American Society for Testing Materials will hold its twenty-ninth annual meeting at the Chalfonte-Haddon Hall, Atlantic City, N. J., on June 21-25, 1926. The executive committee is considering the possibility of holding the 1927 annual meeting at some place other than at Atlantic City and has appointed a committee to canvass other locations and report its recommendations.

An injunction restraining the Boston & Maine from making any reduction in its construction or repair forces in the State of New Hampshire was issued at Concord on December 11, pending further consideration of charges filed with Justice O. W. Branch. It is alleged that contemplated changes in the operation of shops would be in violation of a law of 1917 which was passed in connection with the reorganization of Boston & Maine properties.

Group life insurance for the employees of the Texas & Pacific went into effect on December 1, the railway company having made a contract with the Metropolitan Life Insurance Company for the benefit of all active employees who have been in the service six months or longer. The charge to the employees is \$1.75 each, per month, regardless of age or occupation. The policy includes life, accidental death, dismemberment and weekly sickness and accident benefit. The regular death benefit is \$1,000; accidental death, \$2,000, etc. In addition to the usual feature there is a provision for a benefit of \$10 a week if an employee sustains bodily injury when off duty.

Christmas parties are to be held by officers and employees of the Pennsylvania on Tuesday, December 29, at numerous central points throughout the system. Announcement is made in the Pennsylvania News of December 15 that arrangements are being made to enable every employee who can be spared from his duty to attend one of these gatherings. At Philadelphia there will be a meeting in the Metropolitan Opera House in the evening; at Pittsburgh, there will be one in the Syria Mosque between 2 p. m. and 4 p. m.; at Chicago at the Edgewater Beach Hotel between 7 p. m. and 8 p. m. Other points at which arrangements have been made for meetings are Buffalo, N. Y., Cleveland, Ohio, Canton, Ohio, Dennison, Ohio, and Altoona, Pa. Program will be broadcast from stations WIP, Philadelphia; KDKA, Pittsburgh, and WEBH, Chicago.

### Cost of Government Regulation, Six Millions

An appropriation of \$6,033,309 for the Interstate Commerce Commission for the fiscal year ending June 30, 1927, is recommended in the budget transmitted to Congress by President Coolidge. This is \$820,652 less than was appropriated for the present fiscal year, resulting from reductions from \$2,318,660 to

\$2,276,362 in the general appropriation, from \$1,189,250 to \$978,409 for the policing of accounts of carriers, from \$650,000 to \$602,630 for inspection and safety department work, from \$1,946,552 to \$1,427,960 for valuation, from \$160,000 to \$150,000 for printing and binding, and an increase from \$450,000 to \$458,448 for locomotive inspection. An unexpended balance of \$1,946,552 of the appropriation for valuation work in the current year would be available for use in the ensuing year, according to the budget proposal. An appropriation of \$285,220 for the Railroad Labor Board is recommended, as compared with \$296,805 appropriated for the current year.

### A Canadian Highway Conference Behind Closed Doors

At the tenth annual interprovincial conference on highway and motor vehicle legislation held in Ottawa last week problems common to railways and highways were dealt with, and the closer relationship existing between the steam railways and the bus lines was accentuated. After the close of the conference, which was barred to the press as proposals for new legislation to be requested of federal and provincial governments were considered, a statement was issued summarizing its work and of which the three following paragraphs are of interest to Canadian railways:

"The conference clearly showed common ownership in all Canadian transportation investments, and the taxpayer has paid for the railroads, the electric lines and the highways, and in self-interest must discover the modern economic use of all these systems.

"Discussion clearly showed that highway investments must be continued, and, in connection with the steam roads, Chief Commissioner H. A. McKeown of the Dominion Railway Board, stated that the end of the extension of railway building in Canada had not yet been reached. He cited as a factor the new Garnet wheat, just perfected by the federal Department of Agriculture, which will ripen more quickly than the wheat now grown and which will enable its production much farther north in Western Canada than is now possible. Because of the certainty of this new wheat being largely grown in Western Canada it would be necessary, said the chief commissioner, to push our railway lines north of their present location.

"The fact-finding committee was delegated to obtain information dealing with competitive services, and dangerous grade crossings and protective measures, while the legislative committee was directed to press the federal government for amendments to the 1909 legislation regarding grade separation and deviation."

### Pacific Railway Club Has Younger Men's Program

There were 400 members and guests present at the meeting of the Pacific Railway Club held in the rooms of the Sacramento Chamber of Commerce, December 3, the topic of discussion being "The Younger Man in Railroading." Officers of some of the roads traveled several thousand miles to be present. One officer of the Santa Fe came from Topeka, Kans., and this road sent 20 men and boys from its shops at Richmond, Cal. The opening address of the evening was by William R. McLean, a Southern Pacific freight brakeman, who is also a student at Harvard University. This young man served as a brakeman on interurban trains mornings and evenings while studying transportation at the University of California, and he now works as a freight brakeman during the summer and attends Harvard during the balance of the year. McLean spoke at this meeting on opportunities for the younger man in the transportation department. George Kleeberger, who went to work for the Sacramento Northern a few years ago as an office boy and who is now division accountant, spoke of the opportunities in the accounting department. F. H. Nott, a member of the Twenty-Thirty Club and contracting freight agent for the Western Pacific, told of the chances for advancement and service in the traffic department, and Gerald Coakley, machinist

apprentice in the Santa Fe shops at Richmond, told of the work and opportunities of the apprentice. C. E. Hardy, an apprentice in the Southern Pacific shops, and vice-president of the Y. M. C. A. Younger Railroad Men's Conference, to which position he was elected at the meeting recently held in Pittsburgh, told of what he saw and heard at that conference.

### Railway Equipment Engineer

#### Wanted by the War Department

The United States Civil Service Commission has announced an opening for a railroad equipment engineer to fill a vacancy in the office of the Chief of Engineers, War Department, Washington, D. C. Receipt of applications for this position will close January 5, 1926. The entrance salary is \$3,800 a year. After the probational period of six months required by the Civil Service Act and Rules, advancement in pay may be made without change in assignment, under the provisions of the Classification Act, up to \$5,000 a year. The duties of this position are to represent the Corps of Engineers in the War Department in matters connected with

railroad work; to design steam and gasoline locomotives and rolling stock; to design and lay out railway shops; to prepare procurement plans and specifications for railroad equipment and for the construction and maintenance of way; to select machinery and to supervise its installation; and to perform related work as required.

Competitors for this position will not be required to report for examination at any place but will be rated on their education, training and experience. Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of U. S. Civil Service Examiners at the post office or custom-house in any city.

### Boys and Girls Show Interest in Agriculture

Boys and girls to the number of 1,500 who were winners of the Boys' and Girls' Club contest on the subjects of field crops, livestock, gardening and domestic work, conducted by the railways during the year, attended the International Livestock Exposition and the National Boys' and Girls' Congress in Chicago on Decem-

### OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM ROADS IN THE UNITED STATES

(FOR 191 STEAM ROADS, INCLUDING 16 SWITCHING AND TERMINAL COMPANIES)

Item	United States		Eastern District		Pocahontas Region		Southern Region		Western District	
	FOR THE MONTH OF OCTOBER, 1925 AND 1924									
	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924
Average number of miles operated	236,627.77	236,248.77	59,391.86	59,529.21	5,531.37	5,531.86	38,565.73	38,354.43	133,138.81	132,833.27
Revenues:										
Freight	\$450,492,640	\$439,041,913	\$183,015,194	\$182,039,701	\$21,743,750	\$19,260,724	\$59,946,414	\$53,292,062	\$185,787,282	\$184,449,426
Passenger	a 86,463,740	b 82,885,625	41,961,360	40,842,511	1,855,795	1,895,790	13,763,305	11,001,887	28,883,280	29,145,437
Mail	8,038,437	8,160,091	3,065,322	3,108,903	202,468	194,735	1,186,058	1,163,131	3,584,589	3,693,322
Express	14,896,259	13,584,517	7,686,917	5,906,070	343,668	298,538	1,931,708	1,653,820	4,933,966	5,726,089
All other transportation	18,229,263	17,568,482	10,357,409	9,834,952	246,761	197,416	1,263,425	1,299,106	6,361,668	6,237,008
Incidental	12,448,396	10,944,147	6,549,312	5,471,391	355,724	340,936	1,330,814	1,090,482	4,212,546	4,041,338
Joint facility—Cr.	1,322,318	904,056	585,266	400,963	14,140	15,688	134,397	131,796	588,515	355,609
Joint facility—Dr.	578,032	216,337	311,495	105,230	1,715	2,113	39,126	33,819	225,696	75,175
Ry. operat'g revenues	591,313,021	572,872,494	252,909,285	247,499,261	24,760,591	22,201,714	79,516,995	69,598,465	234,126,150	233,573,054
Expenses:										
Maintenance of way and structures	77,158,242	75,537,116	32,941,493	31,255,752	4,194,752	3,149,515	11,105,222	10,730,356	28,916,775	30,401,493
Maintenance of equip't	110,427,491	113,273,572	52,881,738	53,683,976	4,952,977	5,799,710	14,787,719	14,358,402	37,805,057	39,431,484
Traffic	9,097,356	8,194,398	3,428,035	3,140,188	244,314	218,265	1,632,603	1,367,199	3,792,404	3,468,746
Transportation	193,635,782	189,443,364	87,650,274	88,225,076	6,416,175	6,183,802	26,190,673	22,907,285	73,378,660	72,127,201
Miscellaneous operat'ns	4,848,079	4,351,980	2,253,856	2,086,935	89,644	79,653	562,799	389,158	1,901,780	1,796,234
General	16,498,605	14,298,414	8,345,562	6,239,066	475,094	462,791	1,888,859	1,874,972	5,789,090	5,721,585
Transportation for investment—Cr.	1,313,713	1,060,569	146,573	113,836	110,978	42,736	271,103	207,156	785,059	696,841
Ry. operat'g expenses	410,351,842	404,038,275	187,394,325	184,517,157	16,261,978	15,851,000	55,896,772	51,420,216	150,798,707	152,249,902
Net revenue from railway operations	180,961,179	168,834,219	65,514,900	62,982,104	8,498,613	6,350,714	23,620,223	18,178,249	83,327,443	81,323,153
Railway tax accruals	34,149,623	32,157,542	13,182,574	12,503,613	1,723,257	1,124,996	4,898,081	4,371,743	14,345,711	14,152,190
Uncollectible ry. rev's	184,863	224,012	72,776	84,574	26,508	5,156	20,632	18,171	64,547	116,111
Ry. operating income	146,627,093	136,452,665	52,259,550	50,388,917	6,748,848	5,220,562	18,701,510	13,788,335	68,917,185	67,054,851
Equip'm't rents—Dr. bal.	7,815,027	7,300,737	3,172,753	2,971,555	d 745,314	d 403,674	875,728	d 136,143	4,511,860	4,868,999
Joint facility rent—Dr. balance	1,112,080	1,928,485	42,144	1,102,568	99,860	91,343	93,702	125,552	876,374	609,022
Net ry. oper'g income	137,699,986	127,223,443	49,044,653	46,314,794	7,394,302	5,532,893	17,732,080	13,798,926	63,528,951	61,576,830
Ratio of expenses to revenues (per cent)...	69.40	70.53	74.10	74.55	65.68	71.40	70.30	73.88	64.41	65.13
FOR TEN MONTHS ENDED WITH OCTOBER, 1925 AND 1924										
Average number of miles operated	236,631.78	236,134.75	59,449.25	59,533.78	5,514.21	5,514.78	38,525.14	38,355.45	133,143.18	132,730.74
Revenues:										
Freight	\$3,771,149,210	\$3,605,826,493	\$1,659,013,471	\$1,596,743,889	\$184,487,298	\$162,550,707	\$515,920,334	\$479,751,711	\$1,411,728,107	\$1,366,780,186
Passenger	c 882,820,982	e 907,046,863	436,692,589	443,402,774	19,190,614	20,828,691	128,140,223	122,670,026	298,797,556	320,145,372
Mail	79,236,261	79,816,206	30,326,472	30,510,370	2,055,577	1,971,428	11,379,258	11,314,515	35,474,954	36,019,893
Express	117,521,368	116,771,857	56,790,709	51,238,196	2,748,637	2,652,313	16,264,665	15,677,645	41,717,357	47,203,703
All other transportation	166,515,762	160,936,173	96,386,727	92,344,750	2,046,673	2,011,548	9,758,380	9,400,481	58,323,982	57,179,394
Incidental	105,930,576	99,694,923	52,282,973	50,580,950	3,439,334	3,399,730	12,152,630	10,613,075	38,055,639	35,101,168
Joint facility—Cr.	9,152,835	8,644,455	3,828,656	3,613,274	162,163	151,139	1,359,395	1,293,285	3,802,621	3,586,757
Joint facility—Dr.	2,552,529	2,140,395	866,617	1,057,073	22,384	23,657	348,472	308,852	1,315,056	750,813
Ry. operat'g revenues	5,129,774,465	4,976,596,575	2,334,454,980	2,267,377,130	214,107,912	193,541,899	694,626,413	650,411,886	1,886,585,160	1,865,265,660
Expenses:										
Maintenance of way and structures	694,658,687	677,366,045	294,603,110	277,918,786	31,698,793	28,411,664	98,663,666	93,433,791	269,693,118	277,601,804
Maintenance of equip't	1,055,495,143	1,061,628,235	507,339,806	505,840,664	49,180,181	48,820,181	133,879,091	133,444,444	365,696,065	373,502,946
Traffic	87,772,214	82,025,505	32,655,427	30,944,614	2,283,432	2,090,111	15,483,473	14,215,126	37,349,882	34,775,654
Transportation	1,789,998,899	1,810,700,028	837,986,729	860,153,395	58,805,942	59,399,536	237,921,888	232,996,960	655,284,340	658,150,137
Miscellaneous operat'ns	44,956,194	42,218,288	20,340,941	20,042,995	883,063	838,164	5,235,264	4,061,555	18,496,926	17,275,574
General	146,657,543	140,845,644	65,877,511	62,114,081	4,638,820	4,486,867	18,720,865	18,253,872	57,420,347	55,990,824
Transportation for investment—Cr.	10,447,285	10,914,457	1,614,476	1,501,556	588,693	357,566	1,905,199	1,419,074	6,338,917	7,636,261
Ry. operat'g expenses	3,809,091,395	3,803,869,288	1,757,189,048	1,755,512,979	146,901,538	143,688,957	507,999,049	495,006,674	1,397,001,761	1,409,660,678
Net revenue from railway operations	1,320,683,070	1,172,727,287	577,265,932	511,864,151	67,206,374	49,852,942	186,627,365	155,405,212	489,583,399	455,604,982
Railway tax accruals	299,920,000	285,583,860	123,993,160	116,363,803	13,163,570	11,818,286	41,323,269	36,015,569	121,440,001	121,386,202
Uncollectible ry. rev's	1,491,642	1,746,906	717,385	787,990	72,671	40,102	185,662	166,094	515,924	752,720
Ry. operating income	1,019,271,428	885,396,521	452,555,387	394,712,358	53,970,133	37,994,554	145,118,434	119,223,549	367,627,474	333,466,060
Equip'm't rents—Dr. bal.	65,623,305	60,930,793	34,871,972	36,425,449	d 5,201,342	d 3,420,553	6,888,569	2,999,825	29,064,106	24,926,072
Joint facility rent—Dr. balance	18,600,615	17,799,167	8,541,239	9,275,231	911,603	939,751	1,105,919	1,062,322	8,041,854	6,521,863
Net ry. oper'g income	935,047,508	806,666,561	409,142,176	349,011,678	58,259,872	40,475,356	137,123,946	115,161,402	330,521,514	302,018,125
Ratio of expenses to revenues (per cent)...	74.25	76.44	75.27	77.42	68.61	74.24	73.13	76.11	74.05	75.57

a Includes \$3,652,788 sleeping and parlor car surcharge. b Includes \$3,289,223 sleeping and parlor car surcharge. c Includes \$33,214,432 sleeping and parlor car surcharge. d Deficit or other reverse items. e Includes \$31,203,144 sleeping and parlor car surcharge.

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

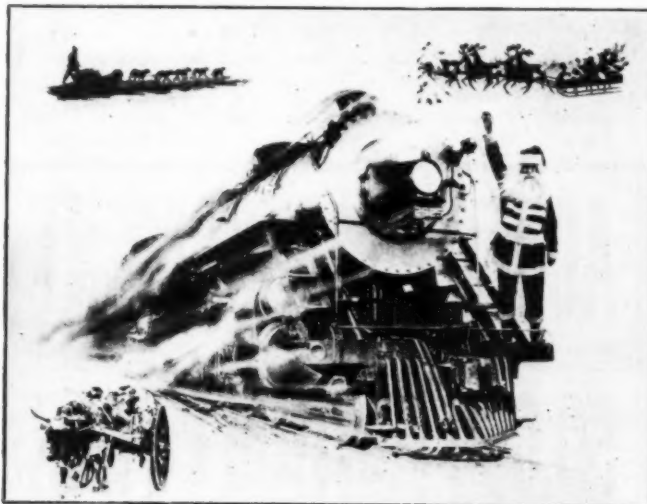


ber 1 to 5. Those attending had demonstrated their usefulness in some line of work which they had undertaken and were awarded free transportation to the exposition. In addition to the prizes offered by the railways, the Western Railways' Committee on Public Relations offered a prize of a trip to the exposition to the boy or girl in each state in the western territory who was judged to have done the best work under the direction of the State Agricultural College in the Boys' and Girls' Club movement during 1925. The winners, from 21 states, were required to write essays on the subject, "What the railroad means to the farmer," and the three best essays were awarded prizes of \$100, \$50 and \$25, respectively. The first prize was won by a boy of Tempe, Ariz., the second by a boy in Minnesota and the third by a boy in Louisiana.

A dinner was given to the 1,500 winners on December 3 with the railroads as hosts. Addresses were made by A. C. Johnson, vice-president of the Chicago & North Western, and Samuel O. Dunn, editor of the *Railway Age*. C. D. Morris, assistant to the chairman of the Western Railways' Committee on Public Relations, presented the essay prizes at the dinner.

### The Great Northern's Christmas Greeting

Present-day methods of transportation are contrasted with earlier methods in the Christmas greetings which will be sent by the Great Northern to its employees this year. The story of the Red river of the North Trail, characterized as the main highway traveled by Santa Claus in his annual journey from the North Pole, is related. The story points out that the railroad lines



Transportation from the North Pole—Ancient and Modern

through Minnesota, North Dakota and Canada parallel the Red river trails. These trails were originally made by ox carts and dog sledges and made possible the interchange of supplies and furs between St. Paul and the north. The message congratulates the employees upon the importance of their service in helping the world to advance.

### An Up-to-Date Christmas Greeting

"It is good to give one day to the ideal." Beginning with this quotation from some writer of the past, the Buffalo, Rochester & Pittsburgh, in its Christmas circular, assures its patrons of un-failing care, vigilance and good-will. Continuing, the circular says, in part:

"The ideal of the Christmas holidays is the home-coming; the gathering of the family for one day out of the year under the home roof. Those who come home for Christmas over our railroad, or who come to the city for Christmas shopping, cannot but sense the holiday spirit which pervades our stations and trains. The usual courtesy, which is a natural part of railroad men, is augmented by an additional desire to afford every help possible. The ticket agent selling your ticket knows that he is helping Santa Claus along. The trainmen are careful that no passenger, with arms full of Christmas gifts, makes a misstep upon boarding or leaving trains, and both the trainmen and conductors make it a

point that no packages are left behind. Express and mails will run heavy, yet the Christmas ideal permeating the entire railroad will speed up, yet carefully handle, this traffic and everybody will do their best that all packages and mail are at their destination by Christmas day. Many railroad men must work on Christmas day that passenger service be not interrupted and delay some home-comings. Yet the railroader who works takes pleasure in performing his duty, for he is giving something of the season's ideal to every passenger. All of us would like to be home, but those of us who work appreciate the privilege of service."

### When Master-Mechanic Was Dispatcher

Sixty-six years ago the railroad men of New England had not heard of Form F, or Form 19, or Rule 201, or any one of many other modern ideas connected with train dispatching; but they got the trains over the road. The following copy of an order, issued on the Central Vermont before the civil war, has been sent to the *Railway Age* by J. W. Wardlaw, general manager of that road. The body of the order contains 86 words. The Vermont train-dispatcher had not yet appeared.

Northfield, Vt., Oct. 7, 1859.

FRANK CLATUR, Engineer.

Dear Sir:—You will please follow No. 2 mail train this P. M. to Rouses Point with the engine Mohegan. The engine on mail train will carry a red flag for your engine which you will follow to the Point, and carry a red flag for the Winoski which will follow your engine to the Point and return tomorrow on freight. You will be careful to keep safe distance from the train you follow and notify all concerned what your flag is for. You will return tomorrow on freight.

Yours,

E. F. PERKINS,  
M. M. Vt. C. R. R.  
By R. Camp.

### Hearing on "Recurrent Acknowledgment"

#### Requirement of Train Control Specifications

A hearing was held before Examiner Mullen of the Interstate Commerce Commission at Washington on December 14, with respect to the interpretation placed by Division 1 of the commission upon paragraph 2b, under "Functions" of the specifications and requirements for automatic train-stop or train-control devices. The interpretation, which several of the roads have asked the commission to withdraw, is that "Consistent practice requires definite action by the engineman at each signal indicating stop." W. M. Jeffers, general manager of the Union Pacific, said that operating officers do not feel that the additional requirement of recurrent acknowledgment is necessary and they do feel that it is to some extent objectionable. He said he feared there is a disposition to go too far in assuming that the engineman is not going to be alert, and that the biggest mistake the commission or the railroads could make would be to "get the enginemen in a frame of mind to expect that a device is going to take care of them." A. H. McKeen, signal engineer of the Union Pacific, gave more detailed testimony. J. E. Saunders, signal engineer of the Delaware, Lackawanna & Western, and H. H. Shepard, general superintendent of that road, also testified. Other roads which have installed or are now installing the Union Switch & Signal Company's device, similar to that on the Union Pacific, asked leave to adopt the testimony without introducing additional cumulative evidence.

### Ontario May Build Railway Into

#### Quebec—Quebec to Appeal

The Supreme Court of Canada last week decided that the Dominion government had power to authorize the Nipissing Central, a subsidiary of the Ontario government-owned Temiskaming & Northern Ontario, to cross Quebec Crown lands into the new goldfields of Rouyn in northwestern Quebec. Premier L. A. Taschereau of Quebec province later in the week announced that his government would appeal from this decision to the Privy Council in London. In the meantime, he said, no change has been made in the plan to build a Canadian National branch from O'Brien, on the National Transcontinental, to Rouyn, a distance

of 50 miles southward. At the next session of the Quebec Legislature the name of the proposed line will be changed from the Rouyn Mines Railway to the National Transcontinental Branch Lines Railway Company. It is stated, too, that the railway will seek additional powers at the next session of the Legislature.

Considerable interprovincial feeling has developed over this Rouyn railway competition and this has been seriously intensified by the judgment of the Supreme Court. The Ontario government officials feel very warm over the apparent success of the Quebec government in getting the Canadian National branch line into Rouyn under way thus making it more difficult for the Ontario government to tap that region. While the Supreme Court has ruled that the federal government may authorize the Ontario road to go into Rouyn, yet pending Quebec's appeal to the Privy Council nothing would be done and in the meantime the Canadian National line would be almost in position to get the business. While Ontario claims a technical victory in court yet it sees obstacles in the way of liquidating that triumph.

### "Dividends of Safety"

The awarding of the E. H. Harriman gold medal to the Union Pacific, for its excellent safety record in 1924, noticed in the *Railway Age* of November 21, page 963, was based on a record quite unusual. This record was referred to by Carl R. Gray, president of the Union Pacific System, in his address at the banquet held in connection with the annual meeting of the National Safety Council at Cleveland, last September. That address, entitled as above, has been issued in pamphlet form; and from data therein shown it appears that up to the end of August last, the record of employees injured on the Union Pacific continued to decrease, in a remarkable way. The statement by Mr. Gray says, in part:

To be specific as to the "dividends of safety" consider the progress made on the Union Pacific System since the termination of Federal control. The following is the number of reportable accidents in each year, with the rate, and reduced to the million man-hour basis:

CASUALTIES TO EMPLOYEES ON DUTY

Year	Casualties	Man-hours	Casualty Rate
1920	3,120	134,653,000	23.17
1921	1,650	127,566,000	12.93
1922	1,394	132,210,000	10.46
1923	1,135	144,183,000	7.87
1924	785	132,516,000	5.92
1925 (7 mos.)	271	69,642,167	3.89

If the 1920 casualty rate of 23.17 had applied throughout the year 1924, the number of casualties would have numbered 3,070, or 2,285 more than the actual. Thus in the year 1924 and the first seven months of 1925, we may say that 3,628 employees have been saved from more or less serious injury, or possible death. The railroad company has benefited through the increased efficiency of the men themselves and their co-workers.

The highway crossing record furnishes an astounding situation. . . . Automobile drivers should not race trains nor drive rapidly up to a crossing and then stop, but should slacken speed some distance back and indicate plainly to the engineer that they do not intend to try to cross ahead of the train. Some veteran engineers of high speed passenger trains running through densely populated sections, lie off on Sunday rather than take the risk of shattering their nerves over these hairbreadth escapes of Sunday motorists.

Automobilists should stop, look, and listen, even at crossings protected by bells. Especially is this necessary where there is more than one track. Co-operation between the railroads and the counties and municipalities in relocating highways to close up hazardous or unnecessary grade crossings, is helping to solve the problem. Obstructions to the view such as billboards, trees, banks, and buildings can be removed, and this is going on all the time. Advance warning signs are being placed back of crossings, either in the form of upright posts, or the letters "R. R." painted on the roadway to notify auto drivers that they are approaching a railroad grade crossing.

Engineers are being trained to blow their whistles and ring the bells in a way to reach the ears of auto drivers most effectively. But some drivers are oblivious to all warnings. Every day, hundreds of crossing gates lowered momentarily to allow trains to pass are broken, even though they are vividly painted alternate stripes of black and white.

A large proportion of our grade crossing accidents are caused

by drivers running into the sides of our trains; one last week struck the eleventh car of a slowly moving freight train.

The Safety Movement has justified itself many times over in its twenty years of existence. The future lies largely in the hands of such constructive agencies as this National Safety Council. What could be nobler than to save a life! Have you ever stood beside one who had been killed as the result of an avoidable accident? I have. Have you ever had the widow and children come to you and tell you of the grief and heartache, poverty and misery that followed in the wake of the father's careless or thoughtless act? I have. And it was to prevent these dreadful conditions that the Safety Movement was established. Lives saved, limbs saved, homes saved—these are the dividends of safety.

THE MAILS were carried over 230,469 miles of railroads, at a cost of \$107,786,935, in the fiscal year 1925, according to the annual report of the Postmaster General. The side and transfer service in connection with the railroad service was maintained at a cost of \$1,219,923. Mail messenger service was maintained at a cost of \$8,089,717, an increase over last year. The greater part of the increase was due to the policy of taking over side service otherwise provided for by the railroad companies in cases where a saving to the government can be made. The mails were carried over 8,042 miles of electric railroads at a cost of \$619,201. On June 30, 1925, there were in operation 4,815 railway postoffice trains covering 208,051 miles of railway postoffice service, with 269,970,003 miles of annual travel. There were 14,589 closed-pouch trains. There was a total of 20,693 officers and employees of the service, a decrease of 3.51 per cent in the total number as compared with the previous year. The cost of the service for salaries was \$50,176,481; for travel allowances for clerks, \$2,986,235; for travel expenses, \$57,510; and \$1,038,330 for miscellaneous expenses. There were 5,078 full and apartment mail cars operated for the Postal Service. Of these, 3,073 were steel and steel underframe.

**ACCEPT THE JUDGMENT  
OF  
50,000 FOOTBALL FANS  
WHO  
TRAVELED BY TRAIN  
TO THE  
YALE-PRINCETON  
AND  
HARVARD-YALE  
FOOTBALL GAMES**

The New York, New Haven and Hartford Railroad Co.

A. A. WHEELER, General Manager

F. C. COLEY, Passenger Traffic Manager

Reduced from a Poster 28 in. x 42 in.



## Traffic News

The Women's Traffic Club of Los Angeles, on Saturday evening, November 28, entertained members of the Los Angeles Transportation Club at a reception and dance in the Transportation Club's new club room.

George O. Sheldon, agent of the Clyde-Mallory Lines, was elected president of the Traffic Club of New England at the annual meeting in Boston, December 10. Four vice-presidents were elected: G. L. Graham, E. B. Jones, S. B. St. John and A. D. Fiske.

The Seaboard Air Line reports that its new Florida train, the Orange Blossom Special, on its first twelve trips, leaving New York City at 9:30 a. m., arrived at West Palm Beach, Fla., on time (8:30 p. m., second day). Beginning with December 7, the Seaboard Air Line has two evening trains out of New York for Florida, one for the east coast, leaving at 6:25 and one for the west coast at 7:10.

The Chicago & Alton, in conjunction with the Missouri Pacific, has established sleeping car service between Chicago and Hot Springs, Ark., as a result of the increased demand brought about by the growing importance of Hot Springs as a winter and health resort. Sleeping cars leave Chicago at 6 p. m. and arrive in Hot Springs at 1 p. m. the next day. Returning the cars leave Hot Springs at 1:05 p. m. and arrive in Chicago at 6:45 a. m. the next day.

Emigrants from the British Isles to Canada are to be carried at very low rates, the government having announced in the House of Commons, this week, that agreements had been made by the British and Canadian government with the steamship lines for a tariff to enable settlers to reach any point in Canada east of the Rocky Mountains at about five mills a mile. The fare from British ports to Halifax, N. S., will be \$15, to Winnipeg, Man., \$27, and to Vancouver, B. C., \$45.

The Cleveland Freight Traffic Association has been organized by the traveling freight agents and chief clerks of railway traffic departments in that city to promote good fellowship, loyalty to employers and the practice of courtesy in contacts with the public. Officers of the organization are, president, J. J. McEwen of the Canadian Pacific, vice-president, Charles Schock of the Southern Pacific, secretary, G. L. McNay of the Southern Pacific, and treasurer, William Dunham of the Lehigh Valley.

Barrels of ale to the number of 35 constituted one of several lots of liquor seized in cars at St. Albans, Vt., on December 4, according to press dispatches from that city. Customs officials who were suspicious about the contents of certain cars in a freight train from Canada, broke open a number of them and seized whiskey, beer and ale to the estimated value of \$75,000. Some of the liquor was found in cars of scrap iron and hay, destined to Asbury Park, N. J., and Jersey City. One car of hay yielded 118 sacks filled with quart bottles of whiskey and other liquors.

The Bath & Hammondsport, nine miles long, has petitioned the New York State Public Service Commission for authority to discontinue passenger service on its railroad. The road is controlled by the Southern Tier Development Company and is operated by or in connection with the Erie, F. D. Underwood being its president. It has operated one train a day, except Sunday, in each direction. The passenger revenue is insignificant. The petition says that by discontinuing passenger service the road can perform its freight and express service more economically and efficiently.

The New York, Westchester & Boston (electric) railway, which, roughly, lies parallel to the New York, New Haven & Hartford from White Plains, N. Y., and Larchmont, N. Y., to New York City, reports large increases in both local and season ticket passenger traffic since the 20 per cent advance in rates for season tickets which went into effect recently on the New Haven. In November, the sale of single trip tickets increased 17 per cent over November, 1924, and the commuter traffic 34 per cent. The Westchester road is owned by the New Haven.

The Conlin Bus Lines, operating buses between Worcester, Mass., and Springfield, about 50 miles, have been adjudged in contempt of court for disobeying a temporary injunction which had been issued by the Superior Court at Boston. The Conlin Bus Lines, started in 1922 on a small scale, had increased their business so that this year they were operating 21 buses. The New York Central (operating the Boston & Albany) complained that the bus lines, interfering with the business of the railroad, were operated in violation of the law, not having secured licenses from the towns of Palmer and Monson. The bus traffic was suspended for about two weeks from August 24, but then was resumed ostensibly for interstate passenger transportation, Boston, Mass., to Hartford, Conn. Judge Lawton, who heard the case, said that there was no evidence that the line was doing an interstate business.

### U. S. Steel Loads 99,200 lb. Per Car

Almost 50 tons was the average of the car loads sent out in the quarter ending September 30, by the 13 manufacturing concerns of the United States Steel Corporation, an increase of 38 per cent over the records when the heavy loading campaign was begun in 1911.

The quarterly total now reported 99,200 lb. or 49.6 tons, is five tons greater than the average carrying capacity of all freight cars of the Class I railroads. The average of 99,200 lb. does not include the iron ore shipments of the Oliver Iron Mining Company, all of which cars are loaded to carrying capacity and would have increased the average load. J. M. Morris, traffic manager, reporting these data, says that this increase of 1,400 lb. per car over the same period in 1924 enabled these shippers to move their products in 11,435 fewer cars than would have been required on the basis of the average load of 1924.

### Officers of the Canadian Industrial Traffic League

The Canadian Industrial Traffic League held its annual meeting in Toronto on November 25, the retiring president, W. R. Ingram, traffic manager of the Swift Canadian Company, Ltd., being in the chair. Honorary officers elected were: honorary president, J. E. Walsh, general manager, the Canadian Manufacturers Association, Toronto; honorary vice-presidents, T. Marshall, Toronto Board of Trade, J. K. Smith, Montreal Board of Trade, D. McLean, Hamilton Chamber of Commerce.

Officers elected were: president, W. C. Thompson, traffic manager, Goodyear Tire & Rubber Co., Ltd., New Toronto; vice-president, E. J. C. Finch, Imperial Oil, Ltd., Montreal; treasurer, H. W. Blahout, Dunlop Tire & Rubber Goods Co., Ltd., Toronto; general secretary, Colin D. Crichton, Imperial Oil, Ltd., Toronto.

### Further Proceedings Under

#### Hoch-Smith Resolution Contemplated

Although the hearings now being held in the western district are broad in scope, the Interstate Commerce Commission says in its annual report in commenting on the Hoch-Smith resolution, "it is recognized that they will not afford a record upon which the mandates of the resolution can be fully complied with, even in the western district." It is hoped, the report says, that those hearings will afford a means whereby situations of pressing importance in the western district may be brought before the commission for consideration prior to a more comprehensive study to be made of the rate structure of the country as a whole. "We are now engaged in working out the details of a comprehensive plan for such a study," the report continues. "The task assigned to us by the resolution is one of magnitude which will take time to complete. Current work is taxing the capacity of our present forces and when the nation-wide study which we now contemplate is under way those forces will be inadequate."

### Net Ton Miles for October Break Record

The greatest freight traffic for any one month on record was moved by the railroads in October, according to reports compiled by the Bureau of Railway Economics. The net ton miles amounted to 44,061,988,000, an increase of 2.2 per cent, as compared with the previous record established in October, 1924. It also was an increase of 4.4 per cent, as compared with the same month in 1923, and an increase of 3.7 per cent as compared with the same month in 1920.

The present record shows, in the Eastern district, an increase of 2.4 per cent, and in the Southern district 10.5 per cent. The Western district, however, showed a decrease of 0.8 per cent, compared with October, 1924.

For the first ten months in 1925, the volume of freight traffic amounted to 377,594,710,000 net ton miles, an increase of 5.9 per cent over that of the corresponding period last year, but a decrease of 2.2 per cent under that of the same period in 1923.

A new high record for the average daily movement of freight cars was also made in October, 32.2 miles per car per day. This average exceeded by 1½ miles the previous record of 30.7 miles made in October, 1923, and 1924 and again in September, 1925.

The average load per freight car in October was 26.3 tons, a decrease of one ton under October, 1924.

### Rate Hearing at Dallas

The homogeneity of the southwestern section of the United States and the improved financial condition of the railroads in this district as compared with the carriers in the northwest were urged as arguments for the formation of a separate group in the southwest for rate making purposes at the hearing on the application of western carriers for an increase of five per cent in freight rates before the Interstate Commerce Commission which opened at Dallas, Tex., on December 7. The formation of a separate southwestern rate group has been asked by chambers of commerce of Texas, Oklahoma, Arkansas and New Mexico. The proposed plan places Arkansas, Kansas, Louisiana, Missouri, Oklahoma and Texas in the southwestern group and Iowa, Minnesota, Nebraska, North Dakota, South Dakota and Wisconsin in the northwestern group.

J. K. Moore, manager of the Oklahoma Traffic Association, Oklahoma City, Okla., testified that the southwestern carriers are in a better condition than the railroads in the northwest and stated that the southwest is producing more revenue for the carriers than the northwest and at less expense. He also showed that the increase in traffic density in the southwest is greater than in the northwest.

Dr. E. H. Sellards, head of the Bureau of Economic Geology of the University of Texas, stated that the freight tonnage of Texas railroads will increase steadily from year to year with no possibility of a decrease as the vast natural resources of the state are developed. His entire testimony was based upon the importance of the natural resources of Texas and showed the effect of their development upon railroad revenues.

Judge George W. Armstrong, a manufacturer and farmer of Fort Worth, Tex., testified regarding the inability of the agricultural and livestock interests of the southwest to bear an increase in railroad rates. He charged that stabilization in prices is manipulated by the federal reserve system of banking and cited as an example the deflation which occurred in 1920. He argued that the Federal Reserve Board could have extended further credit to the agricultural interests of the west and south and could have stabilized prices then as well as it does now. This deflation, he said, bankrupted 80 per cent of the cattlemen and if the board should see fit to change its present policy we should have another period of deflation.

E. H. Thornton, traffic manager of the Galveston Chamber of Commerce and the Galveston Cotton Exchange, representing the Oklahoma Cotton Growers' Association, the Southern Kansas Millers' Traffic Club and the Southwestern Industrial Traffic League, testified that no traffic relation exists between the southwest and the northwest of any importance. The southwest, he said, is more closely related to the southeast and the Mississippi Valley than to the northwest or any other section. There is no great movement of export grain from the northwest to the southwest. A small amount comes from Nebraska and Colorado but the greatest movement of grain to the Texas ports is from the southwestern producing points.

Representatives of Texas cattlemen charged that they were not getting a fair opportunity to present their evidence. Examiner K. B. Taylor offered to hold a night session to permit the cattlemen to introduce their evidence but Judge Sam H. Cowan of Fort Worth, representing the cattlemen, protested on the grounds that his constituents were entitled to a "broad, open, daylight hearing" like other people. Opportunity was then given the cattlemen to testify during the regular session.

## Commission and Court News

### Interstate Commerce Commission

The Interstate Commerce Commission has found justified the proposed increased rates on newspapers carried in baggage cars on passenger trains between points in trunk line and central territories, which were filed by the railroads to become effective on May 1, but which were suspended upon protest of various newspaper publishers and later voluntarily postponed until December 15.

### State Commissions

The Public Service Commission of New York has issued an order requiring the Delaware & Hudson to provide facilities at or near East Worcester to permit the turning of locomotives which now are regularly moved backward from Worcester to Delanson. The order requires the turning facilities to be installed by May 1, 1926, and that the railroad thereafter discontinue the practice of operating the locomotives backwards for the 30-mile distance.

Strong objections to the proposal of the city of Los Angeles that they construct a union station in that city, where entered by the Southern Pacific, the Union Pacific and the Atchison, Topeka & Santa Fe at a hearing before the Railroad Commission of California in Los Angeles on November 30. They reiterated previous assertions that the Southern Pacific station is ample to accommodate the Southern Pacific and Union Pacific passenger traffic and that the Santa Fe, while in need of a new station, has adequate land on which to build it.

### United States Supreme Court

#### Recovery of Freight Overcharge by Consignor

The Supreme Court of the United States has affirmed the judgment of the Circuit Court of Appeals for the Fifth Circuit, 295 Fed. 53, allowing the Sloss-Sheffield Iron & Steel Company and other furnace companies reparation on shipments of pig-iron from points in Alabama and Tennessee to Ohio River crossings and points beyond in central freight association territory, under a reparation order by the Interstate Commerce Commission for excessive freight charges exacted in violation of Act to Regulate Commerce, section 1, 60 I. C. C. 595; 62 I. C. C. 646. Proceedings were commenced in 1912 for a reduction of the tariff rates, and in 1914 an order was entered reducing future rates 35 cents a ton. The iron was sold under a standard form of contract containing a provision that the price to the consignee delivered at destination was based on the existing tariff rate, the consignee to have the benefit of any declines and to pay any advances.

The railroad claimed that the Sloss-Sheffield Company, the consignor, could not recover because it was not damaged by the excessive freight charges. The Supreme Court holds that on goods sold f. o. b. destination, the published freight charge from the point of origin becomes, in essence, a part of the seller's cost of production; that an excessive freight charge for delivery of the finished article affects him as directly as does a like charge upon his raw materials; and that the burden of the published freight rate rested upon the consignor under the bill of lading as well as under the contract of sale. "The purchaser who paid the freight," the court said, "did so solely as agent for the seller. The carrier did not know of the provision in the sales contracts. With the rights or equities as between seller and purchaser it had and has no concern."

Mr. Justice McReynolds filed a separate opinion, agreeing with the dissenting opinion by Commissioner McChord in 40 I. C. C. 738, pointing out that the consignor had suffered no proximate damage and therefore ought not to recover; and stating his opinion that the view of the commission that the consignee who pays freight charges under an f. o. b. destination contract of sale acts as agent for the consignor and the latter may recover when these are found to be excessive should not be applied to the reparation order in question, where the consignee had clear right to demand reasonable rates.



Mr. Justice Stone dissented "on the ground that the consignees who paid the freight to procure goods, the title to which was in them when shipped, were within the protection of the statute prohibiting unreasonable freight rates, and upon payment of the illegally exacted freight from their own funds they were the persons suffering proximate damage and were therefore entitled to recover the excess freight within the meaning of the statute and the reasoning of the opinion in *S. P. Co. v. Darnell-Taenzer Co.*, 245 U. S. 531."—*L. & N. v. Sloss-Sheffield Steel & Iron Co.* Decided November 23, 1925. Opinion by Mr. Justice Brandeis.

### Yardmaster Not Within Hours of Service Act

The action for penalties under the Hours of Service Act, Sec. 2, reported in the *Railway Age* of December 5, page 1059, was on the question whether two yardmasters kept on duty for twelve hours each in the Atchison's Corwith Yard, Chicago, fell within the act. The Circuit Court of Appeals, 3 Fed. (2d) 138, affirmed a judgment holding the railroad company liable. The decision of Supreme Court of the United States in reversing the judgment gives the following details:

The yardmaster and the tower man telephoned each other as to whether cars could be moved in or out of the yard. This telephoning was merely an incidental, and a small, part of the yardmaster's duties. Twenty-four calls a day was a liberal estimate. The messages were not orders, although they generally would govern the decision of the tower man. The movements affected were not of the kind that require the greatest solicitude, even when they were train movements, which was not always the case. It was held that the office hardly could be described as "continuously operated," when the yardmaster was not in it much more than half the time, but was about the yard attending to other things. *Atchison, Topeka & Santa Fe v. United States.* Decided November 30, 1925. Opinion by Mr. Justice Holmes.

### Claim for Misdelivery Distinguished

#### from "Damage in Transit"

A shipper, on June 24, 1918, at New Bern, N. C., delivered to the Director General, then operating the Norfolk Southern, a load of scrap iron for Clarksburg, W. Va., billed to shipper's order notify George Yampolsky. The bill of lading provided: "Claims for loss, damage, or delay must be made in writing to the carrier \* \* \* within six months, etc. The shipment arrived at Clarksburg, July 15, and was delivered to Yampolsky without surrender of the bill of lading, and without the knowledge of the shipper, at all times its lawful holder. No claim was made by the shipper until March 5, 1920.

In view of the proviso in section 20 that if the loss, or damage complained of was due to delay or to being damaged in transit by carelessness or negligence, then no notice of claim shall be required, the question was presented whether this case was one where the right of recovery depends on the written notice of claim.

Rejecting the reasoning of the Virginia state courts the Supreme Court of the United States holds that: "The loss was due solely to misdelivery; that is, 'a failure to make delivery' in accordance with the bill of lading (*G., F. & A. v. Blish Co.* 241 U. S. 190, 195.) As construed by this court the second proviso in the statute embraces three classes: (1) loss, damage, or injury due to delay, (2) damage while being loaded or unloaded, (3) damage in transit. Clearly, misdelivery is not in the first or second class. And, unless it is in the third class, the proviso does not apply. The context shows that the phrase 'in transit' was not intended to have the broad meaning attributed to it by the state court. Loading precedes, and unloading follows, transit. In the ordinary and usual meaning of the word, 'transit' ends before delivery at destination. Misdelivery is not mentioned in the proviso; and the language used is inconsistent with and negatives any intention to include claims for damages on account of misdelivery in the class defined as 'damage in transit.'"

The shipper's contention that under section 10 of the Bills of Lading Act it was not necessary to comply with the requirement of the bill of lading was also rejected; and, there being nothing in the statutory provisions relied on by the shipper to excuse its failure to make claim within the time specified in the shipping contract, judgment for plaintiff, *Roper*, was reversed.—*Davis v. John L. Roper Lumber Co.* Decided November 16, 1925. Opinion by Mr. Justice Butler.

## Labor News

General chairmen of the Switchmen's Union of North America, at a meeting in Chicago on December 9, followed the action of the train and engine service brotherhoods in deciding to ask increases in their rates of pay of approximately 7 per cent. It was also decided to request a higher rate of pay for switchmen assigned to night duty than for those in day service.

### A. C. L. Operators Seek Vote

Representatives of telegraphers who have been employed on the Atlantic Coast Line since the strike of such employees last fall, the majority of whom were strikers who made re-application for their jobs, appeared before the Railroad Labor Board on December 4 to ask that the board order an election to select by ballot representatives to speak for them in negotiations with the management. According to a labor news item appearing in the *Railway Age* of December 5, the hearing was the result of a visit of three labor board members to the Atlantic Coast Line just prior to the calling of the strike. This was not the case, the hearing being instituted by the board on the request of the newly employed telegraphers.

### Increase Denied to Signalmen

The signal department employees of 16 railways were denied requested increases in wages by the Railroad Labor Board in a decision handed down on December 15, which remanded the case to the parties to it. The board says that 56 per cent of the signal department employees now receive rates of pay in excess of those established by the board. These increases, granted by the management, varying so much in amount as to indicate that local conditions were the most important consideration in the awards. The requests before the board were also not uniform, ranging from three cents to 13 cents an hour for the various groups of employees, indicating a similar consideration of local conditions. Since no showing was made at the hearings before the board as to the local conditions existing on the lines involved, the board found no other course than to refer the case back. The decision thus failed to indicate what the attitude of the board may be toward impending requests for wage increases from other classes. The roads involved in this case were the Atlantic Coast Line, the Central of Georgia, the Central of New Jersey, the Chicago & North Western, the Chicago, Indianapolis & Louisville, the Chicago, Milwaukee & St. Paul, the Kansas City Terminal, the Lehigh Valley, the Louisville & Nashville, the New York, New Haven & Hartford, the Northern Pacific, the Pere Marquette, the Southern Pacific (Pacific System), the Southern Pacific in Texas and Louisiana, the Terminal Railroad Association of St. Louis, the Wabash and the Western Pacific. The employees were represented by the Brotherhood of Railroad Signalmen of America.

### Dispatchers Form Investment Company

The Dispatchers' Investment Company is the name of a banking organization which is being started by the American Train Dispatchers' Association; headquarters, 10 East Huron street, Chicago. J. G. Luhrs, president of the Train Dispatchers' Association, will be president of the banking organization; and C. L. Darling, secretary and treasurer. Announcement is made that L. E. Clark, vice-president of the Co-operative National Bank, Cleveland, Ohio, owned by the Brotherhood of Locomotive Engineers, has resigned that place to become executive vice-president of the new company.

THE CHICAGO, BURLINGTON & QUINCY is now using its new Denver shops for the repair of all its locomotives used in Colorado, Montana, Wyoming and western Nebraska. Heretofore this work has been done at Havelock, Neb. The force, when the arrangements are complete, will call for 300 additional men, the present number employed being 700. All repair work for the Colorado & Southern is also being done in this shop.

## Foreign Railway News

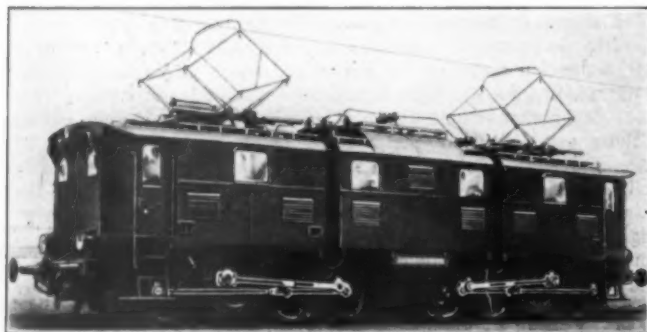
### Silesian Electric Freight Locomotive

A new design of electric freight locomotive has been developed by the A. E. G. Company in Europe to meet the present demands of traffic on the Silesian mountain railways.

#### PRINCIPAL CHARACTERISTICS

Gauge .....	4 ft. 8½ in.
Driving wheels, diameter.....	4 ft. 1 in.
Length over buffers.....	55 ft.
Fixed wheel base.....	14 ft. 9 in.
Total weight .....	264,000 lb.
Axle load .....	4,400 lb.
Trolley voltage .....	15,000
Frequency (cycles) .....	16½
Maximum tractive effort.....	59,500 lb.
Maximum speed .....	34 m.p.h.
One hour rating at 19 miles per hour.....	2,300 hp.
Gear ratio .....	1:4.04

The locomotive is driven by four motors arranged permanently in two groups in series so as to form two double motors. These motors are fed from a transformer so that the greatest difference of voltage across the terminals of the double motor is 840 volts, while the maximum pressure to earth does not exceed 420 volts. Control is effected by electrically operated compressed air con-



Silesian Electric Freight Locomotive

tactors, which are fixed on the transformer so that a short and simple wiring system made up of flat copper bars is obtained.

The locomotive has two three-axle trucks. Each truck carries one of the double motors, the underframe of which is used to support both the bearings for the gear spindle and the armature shaft. The three driving axles, which are coupled together by rods, are driven by the double motor gear shaft, the centre of which is 10 in. above the centre of the driving axle, through slightly inclined connecting rods so that the diagonal rod engages with the coupling rod on the driving axle near the middle of the locomotive.

The transformer is placed at the centre of the locomotive on a bridge whose two ends rest on the underframe. The bearing points also serve for coupling the two parts of the locomotive frame together.

The locomotive housing is in three portions, the two outer parts being rigidly connected with the underframe. They enclose the double motor, as well as the cooling equipment. A driving compartment at each end of the locomotive contains the control equipment. The middle portion of the housing is supported by the transformer bridge and encloses the transformers and the contactors. The three portions of the housing are connected together by flexible gangways.

### Miscellaneous

The Department of Commerce has received the following report from an agent in Siam.

Tenders for fittings for passenger cars for the Royal State Railways of Siam, with specifications and plans, have been received and may be borrowed by interested persons on request for Report 191104. These tenders will be received up to 2 o'clock P. M., February 15, 1926.

## Equipment and Supplies

### Locomotives

THE ATCHISON, TOPEKA & SANTA FE has ordered 15 Santa Fe type locomotives from the Baldwin Locomotive Works.

THE OAHU RAILWAY & LAND CO., Hawaii, has ordered two Mikado type locomotives from the American Locomotive Company.

THE WABASH has ordered 25 eight-wheel switching locomotives from the Lima Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of November 21.

THE MISSOURI PACIFIC has ordered 15 eight-wheel switching locomotives from the Lima Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of December 12.

THE DETROIT TERMINAL has ordered three eight-wheel switching locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of November 21.

THE BALTIMORE & OHIO has placed orders for 25 Santa Fe type locomotives with the Lima Locomotive Works. It is also reported that the company has placed additional contracts for locomotives, but this has not yet been officially confirmed.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered three electric locomotives from the Westinghouse Electric & Manufacturing Company and the Baldwin Locomotive Works. Negotiations for the purchase of these locomotives were reported in the *Railway Age* of August 22.

### Freight Cars

THE CHICAGO & NORTH WESTERN contemplates buying 300 ore cars.

THE UNION PACIFIC is expected to enter the market soon for 100 tank cars.

THE PACIFIC FRUIT EXPRESS will rebuild 41 refrigerator cars in its own shops.

THE GREAT NORTHERN plans the purchase of 1,000 steel underframe 50-ft. automobile cars.

THE LOUISVILLE & NASHVILLE has ordered 1,000 gondola cars of 50-tons capacity from the Pressed Steel Car Company.

THE GEORGIA PINE TURPENTINE COMPANY has ordered one, 8,000-gal. tank car from the General American Tank Car Corporation.

MITSUI & Co., New York, has ordered 52 dump cars of 5 cu. yd. capacity, for export to Japan, from the Case Crane & Engineering Company.

THE UNION REFRIGERATOR TRANSIT COMPANY has ordered 400 refrigerator cars from the American Car & Foundry Company, and will build 200 refrigerator cars in its own shops.

THE CONLEY TANK CAR COMPANY has ordered 200 tank cars from the American Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of November 7.

THE BALTIMORE & OHIO has ordered 1,000 steel box cars from the Bethlehem Steel Company and 1,000 from the Standard Steel Car Company. This item has not yet been officially confirmed.

THE PITTSBURGH & WEST VIRGINIA has ordered 400 steel and 300 composite gondola cars from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of December 5.

THE ATLANTIC COAST LINE has ordered 300 hopper cars and 525 box cars from the Pressed Steel Car Company and 100 ballast cars from the Virginia Bridge & Iron Co. Inquiry for this equipment was reported in the *Railway Age* of November 28.



THE LEHIGH VALLEY has ordered 500 steel sheathed automobile box cars of 50 tons' capacity from the American Car & Foundry Company; 500 steel hopper cars of 70 tons' capacity and 100 drop end gondola cars of 70 tons' capacity, from the Bethlehem Steel Company. The inquiries for this equipment were reported in the *Railway Age* of November 14 and 21 and December 5.

## Passenger Cars

THE GREAT NORTHERN will convert 24 sleeping cars into day coaches.

THE BOSTON ELEVATED has ordered 60 subway cars from the Standard Steel Car Company.

THE BALTIMORE & OHIO, according to reports, contemplates buying from 70 to 75 passenger cars. No official confirmation of this report has as yet been obtained.

THE UNION PACIFIC is now inquiring for 10 observation cars, 15 coaches, 5 dining cars, 10 baggage cars, 5 horse cars and 2 mail cars. In the *Railway Age* of December 5 mention was made that this company contemplated coming in the market for 47 passenger cars.

THE NEW YORK CENTRAL order for 274 passenger cars reported in the *Railway Age* of December 12 includes 40 coaches for service on the New York Central, 15 baggage cars for the Michigan Central and 10 baggage for the Pittsburgh & Lake Erie ordered from the American Car & Foundry Company; 35 coaches and 4 passenger and baggage cars for the New York Central, 15 coaches for the Pittsburgh & Lake Erie, 2 passenger and baggage cars for the Michigan Central and 3 for the Cleveland, Cincinnati, Chicago & St. Louis, ordered from the Pressed Steel Car Company; 20 coaches and 2 dining cars for the Cleveland, Cincinnati, Chicago & St. Louis, 15 coaches and 3 dining cars for the Michigan Central, 15 dining cars for the New York Central, ordered from the Pullman Car & Manufacturing Corporation; 32 baggage and mail cars for the New York Central, ordered from the Standard Steel Car Company, and 25 coaches for the New York Central, ordered from the Osgood Bradley Car Company; 20 milk cars for the New York Central ordered from the Merchants Despatch Transportation Company and 18 baggage cars for the New York Central to be built in the New York Central shops.

## Iron and Steel

THE PERE MARQUETTE is inquiring for 800 tons of structural steel.

THE WESTERN PACIFIC is inquiring for 1,000 tons of structural steel.

THE NEW YORK CENTRAL is inquiring for about 2,000 tons of steel for four bridges.

THE UNION PACIFIC is inquiring for 1,500 tons of structural steel for bridges in Utah.

THE LOUISIANA RAILWAY & NAVIGATION Co. is inquiring for 1,700 tons of structural steel.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS is inquiring for 150 tons of structural steel.

THE UNION PACIFIC has bought 1,500 tons of structural steel for use in Utah, from the American Bridge Company.

THE WESTERN PACIFIC has ordered 650 tons of structural steel for use at Elko, Nevada, from the Virginia Bridge & Iron Company.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has ordered 250 tons of structural steel for use at Manitowoc, Wis., from the American Bridge Company.

THE LOUISVILLE & NASHVILLE has ordered 2,100 tons of structural steel for bridges from the American Bridge Company. This company is now inquiring for 100 tons of structural steel.

THE CHICAGO, BURLINGTON & QUINCY has ordered 13,000 tons of rails from the Illinois Steel Company, 8,000 tons from the Inland Steel Company, and 5,000 tons from the Colorado Fuel & Iron Co.

THE MISSOURI PACIFIC has divided an order for 3,000,000 tie plates between the Illinois Steel Company, the Inland Steel Company, the Colorado Fuel & Iron Co., the Tennessee Coal, Iron & Railroad Co., and the Scullen Steel Company.

## Machinery and Tools

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one 15-ton electric overhead traveling crane.

THE LOUISVILLE & NASHVILLE has ordered a 73 in. boring and turning mill from the Niles-Bement-Pond Company.

THE CENTRAL OF NEW JERSEY has ordered two 30-ton locomotive cranes from the Ohio Locomotive Crane Company.

THE NORFOLK & WESTERN has placed orders with the Niles-Bement-Pond Company for the following tools:

- 1, 10-ton, 110 ft. span electric traveling crane,
- 1, 36 in. by 36 in. by 14 ft. planer,
- 1, 27 in. by 16 ft. lathe,
- 1, 50 in. vertical milling machine,
- 1, 90 in. locomotive axle journal turning lathe.

An order has also been given to Manning, Maxwell & Moore, Inc., for seven shop machines including 3 grinders, 2 lathes and some miscellaneous tools.

## Miscellaneous

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon, December 30 covering its requirements of sheets, black galvanized and blue annealed, tubes, seamless steel, axles, car and tender trucks, wire nails and staples, steel bars, steel shapes and steel plates and steel billets.

THE GULF, MOBILE & NORTHERN and the Birmingham & Northwestern (which are operated together) have adopted the American Travel Club plan of selling tickets to certain destinations at reductions on easy weekly payments. Three methods of payment are provided for, the first continuing for 32 weeks at a saving of 10 per cent, the second for 25 weeks at a saving of 7½ per cent, and the third for 20 weeks at a saving of 6 per cent, the payments being made at any of the companies' agencies. As each weekly payment is made it is recorded by affixing a stamp to a certificate held by the purchaser, and when the payments are completed the certificate is exchanged for the railroad ticket desired.

FREIGHT CAR REPAIR SITUATION

1925	Number freight cars on line	Cars awaiting repairs			Per cent of cars awaiting repairs	Month	Cars repaired		
		Heavy	Light	Total			Heavy	Light	Total
January 1	2,293,487	143,962	47,017	190,979	8.3	December, 1924	66,615	1,288,635	1,355,250
February 1	2,305,520	139,056	47,483	186,539	8.1	January, 1925	69,084	1,358,308	1,427,392
March 1	2,313,092	141,192	43,855	185,047	8.0	February	66,283	1,313,088	1,379,371
April 1	2,315,732	143,329	43,088	186,417	8.1	March	71,072	1,348,078	1,419,150
May 1	2,316,561	144,047	45,467	189,514	8.2	April	69,631	1,290,943	1,360,574
June 1	2,320,261	146,998	48,988	195,986	8.4	May	65,651	1,276,826	1,342,477
July 1	2,326,734	150,530	47,938	198,468	8.5	June	71,789	1,296,558	1,368,347
August 1	2,335,223	153,674	43,607	197,281	8.4	July	70,087	1,330,595	1,401,682
September 1	2,333,849	149,705	47,473	197,178	8.4	August	71,307	1,369,878	1,441,185
October 1	2,335,475	139,551	40,020	179,571	7.7	September	72,227	1,335,501	1,407,728
November 1	2,325,086	127,680	37,801	165,481	7.1	October	75,056	1,352,123	1,427,179

Data from Car Service Division Reports.

## Supply Trade News

**W. J. Henry** has been appointed district manager of the **Harnischfeger Corporation**, Milwaukee, Wis., with headquarters at Charlotte, N. C.

**H. A. Brinsley** has been appointed service engineer of the **Paige & Jones Chemical Company**, railroad department, with headquarters at Ft. Wayne, Ind.

The **General Electric Company** has purchased 155 acres of land in St. Louis, Mo., at Birch street and Goodfellow avenue, upon which it plans to construct a plant.

**H. C. Haight**, treasurer and general manager of the **American Forge & Machine Company**, Canton, Ohio, has been elected president, and will be succeeded by **H. L. Barnes**.

The **Niles-Bement-Pond Company** has sold its Pond works at Plainfield, N. J., and the tools, formerly built at Plainfield, will in future be built at the **Niles Tool Works**, Hamilton, Ohio.

The **Bonney Forge & Tool Works**, Allentown, Pa., manufacture of chrome vanadium drop-forged wrenches, has broken ground for an addition to its plant. The new building will be 110 ft. by 200 ft.

The name of **Harry Vissering & Co.**, Chicago, has been changed to the **Viloco Railway Equipment Company, Inc.**, following the sale of the entire interest held by Harry Vissering last February.

**Merritt L. Tice**, representative of the **Benjamin Electric Manufacturing Company**, Chicago, with headquarters at Baltimore, Md., has been transferred to Birmingham, Ala., and will be succeeded by **J. B. Wright**.

**C. E. Phillips**, representative of the **Allis-Chalmers Manufacturing Company**, Milwaukee, Wis., with headquarters at Philadelphia, Pa., has been transferred to Wilkes-Barre, Pa., and will be in charge of the latter office.

The **Standard Steel Car Company**, Pittsburgh, Pa., has purchased the **Siems-Stembel Company**, St. Paul, Minn.; there will be no changes in personnel. **P. C. Stembel**, vice-president, will be in charge of the company's activities at St. Paul, and will represent the **Standard Steel Car Company**.

**George H. Criss** has been appointed manager of the **H. E. McCoy Company**, Pittsburgh, Pa., who are sales representatives in western Pennsylvania and West Virginia, for **The Baker R & L Company**, Cleveland, Ohio, builder of industrial tractors and trucks. Mr. Criss has been associated with the McCoy Company for more than five years and has been identified with the sale of electrical machinery in the Pittsburgh district for nearly 25 years.

**Henry D. Carlton**, vice-president of **Manning, Maxwell & Moore, Inc.**, New York, formerly in charge of the steam specialties department, has now assumed charge also of machine and crane sales. **Joseph Wainwright** is general sales manager of the machinery department; **Thomas S. Stephens** has been appointed manager of railroad sales of the machinery department and **William D. Clarke** has been appointed general sales manager of the crane department.

**George D. Kirkham**, sales agent of the **American Steel & Wire Company**, Chicago, will retire on December 31. Mr. Kirkham first came to the company as sales agent of the old **Washburn & Moen Manufacturing Company**, Worcester, Mass., in 1886. This company was taken over by the **American Steel & Wire Company**, twenty-seven years ago. He served as an expert of the fine wire products of the company until 1902, when he was established as sales agent at Memphis, Tennessee, handling both merchant trade and manufacturing lines.

## Railway Construction

**ATCHISON, TOPEKA & SANTA FE.**—The construction of an ice plant at Escondido, Cal., to cost \$20,000, has been authorized.

**ATCHISON, TOPEKA & SANTA FE.**—Plans have been prepared for the construction of one-story passenger station, 176 ft. by 40 ft., at Riverside, Cal.

**ATCHISON, TOPEKA & SANTA FE.**—The roundhouse at Winslow, Ariz., will be remodeled to increase its depth. Improvements in terminal facilities at Phoenix, Ariz., are also contemplated. A contract has been awarded to the **Sumner Sollitt Company**, Los Angeles, Cal., for the construction of a 2-story office building as an addition to the freight house at Fresno, Cal.

**CENTRAL OF NEW JERSEY.**—This company has awarded a contract for the construction of the sub-structure for bridge No. 8, Allentown Terminal Railroad, to **Richards & Gaston, Inc.** Its cost is estimated at \$52,157.

**CHICAGO, ROCK ISLAND & PACIFIC.**—A contract has been awarded to **Joseph E. Nelson & Sons**, Chicago, for the construction of a two-story freight house, 40 ft. by 260 ft., in Kansas City, Mo., reported in the *Railway Age* of November 28.

**CLINCHFIELD.**—The Interstate Commerce Commission has extended to February 1, 1926, the time within which the Louisville & Nashville is allowed to file its application for a certificate to construct the proposed connections between its McRoberts line and its Harlan County branch on the one hand, and the Clinchfield on the other, in accordance with conditions set down in a decision permitting the Atlantic Coast Line and the Louisville & Nashville to acquire joint control by lease of the Carolina, Clinchfield & Ohio.

**FLORIDA EAST COAST.**—This company has awarded a contract to the **C. G. Kershaw Contracting Co.**, Birmingham, Ala., for grading, bridges and culverts on the line from Bunnell, Fla., to Daytona. A contract has been awarded to **Reid & Lowe**, Birmingham, Ala., for grading, bridges and culverts on the line from Bonaventure to Grant. A contract has also been awarded to the **Union Bridge & Construction Company**, Kansas City, Mo., for a bridge at Crane Creek, Melbourne, Fla., and one to **Reid & Lowe** for a bridge at Elbow Creek, Eau Gallie, Fla.

**FORT WORTH & DENVER CITY.**—The portion of the car shops at Childress, Tex., recently destroyed by fire, with a loss estimated at \$40,000, will be rebuilt.

**GREAT NORTHERN.**—Among improvements authorized for construction in 1926 is a passenger station and extensive yard facilities at Glacier National Park, Mont., to cost approximately \$100,000.

**ILLINOIS CENTRAL.**—A contract has been awarded to the **W. J. Zitterell Company**, Webster City, Ia., for the construction of a passenger station at Berwyn, Ill. A contract has also been awarded to the **Gould Construction Company**, Davenport, Ia., for track elevation and subway construction at Jackson, Miss.

**LOS ANGELES & SALT LAKE.**—Company forces will install a 100 ft. electrically operated pony truss turntable at Milford, Utah.

**LOUISVILLE & NASHVILLE.**—The Interstate Commerce Commission has further extended to February 1, 1926, the time within which this company is to file its application for a certificate for the proposed connections between its McRoberts line and the Harlan county branch and the Carolina, Clinchfield & Ohio, which was made a condition of the commission's authorization for the acquisition of control of the Clinchfield by the L. & N., and the Atlantic Coast Line.

**MEXICALI & GULF.**—A contract has been awarded to **Welch & Stewart**, San Francisco, Cal., for the grading of the second unit, seven miles long, of the projected line from Calexico, Cal., to the Gulf of California, a distance of 135 miles.



**NEW YORK, NEW HAVEN & HARTFORD.**—This company will construct with company forces a reinforced concrete underpass 8 ft. by 10 ft. by 115 ft. long in the rear of the south abutment of its bridge over Asylum street, Hartford, Conn.; estimated cost, \$30,000.

**NORTHERN PACIFIC.**—This company and the Oregon-Washington Railroad & Navigation Company have applied to the Interstate Commerce Commission for authority for the construction by the Northern Pacific of 38 miles of line from Oro Fino in Clearwater county, Idaho, to be jointly operated by the two companies.

**PENNSYLVANIA.**—A contract has been awarded to Wm. McBride, Philadelphia, Pa., for the reconstruction of the Indian Lane over-head bridge, at Elwyn, Pa.

**SEABOARD AIR LINE.**—This company's extension to Miami, Fla., which has been authorized and which was threatened to be delayed or abandoned by reason of failure of individuals and communities to provide right-of-way as promised now seems more likely of consummation with the activity of local business men's organizations at Miami in seeking subscriptions for the sums needed.

**SOUTHERN PACIFIC.**—The construction of a connecting line six miles long from Holtville, Cal., to a connection with the branch line extending eastward from Calipatria is contemplated. Whether the connection will be constructed or not depends largely on the decision of the Railroad Commission of California on the application of the Southern Pacific to purchase the Holton interurban line.

**UNION PACIFIC.**—A contract has been awarded to the Wheelwright Construction Company for the laying of an 8-inch cast iron pipe line 15 miles long from Carter, Wyo., to Leroy, to provide adequate water supply at the latter point.

#### N. & W. to Spend \$2,500,000 at Williamson, W. Va.

The Norfolk & Western is planning extensions and additions to its yards at Williamson, W. Va., provision for a pull out track for the eastbound yard and additional track facilities between the west end of the yard and the passenger station involving an estimated expenditure of approximately \$1,700,000.

Extension of the eastbound and westbound yards involves 850,000 cu. yd. of grading, 1,000 cu. yd. of excavation, 14,150 cu. yd. of concrete, 47 tons of reinforcing steel and 10½ mi. of track.

The pull out track for the eastbound yard involves 50,000 cu. yd. of grading, 600 cu. yd. of foundation excavating, 500 cu. yd. of concrete masonry, 8 tons of steel and a mile of track.

The additional track facilities between the west end of the yard and the passenger station involve 5,000 cu. yd. of grading, 400 cu. yd. of foundation excavating, 700 cu. yd. of concrete masonry, 11 tons of steel girders and 2,000 ft. of track.

This track work will provide 19 tracks in the eastbound yard, of 110 cars each and 12 tracks in the westbound yard of 100 cars each.

The second phase of the work involves terminal facilities, the estimated cost of which is about \$800,000 and the items are as follows:

A 23-stall brick roundhouse, 130 ft. long.  
A machine and smith shop of brick and steel, 95 ft. by 125 ft.  
A two-story fireproof brick and concrete storehouse, 50 ft. by 100 ft.  
An arch brick house of wood and corrugated iron, 36 ft. by 60 ft.  
A wash and locker room of brick, 20 ft. by 70 ft.  
A two-story brick office building, 50 ft. by 75 ft.  
A fireproof brick and concrete oilhouse, 50 ft. by 75 ft.  
A 100-ft. inspection pit of concrete.  
Concrete extensions to the ash hoist.  
A trainmen's lavatory, 28 ft. by 45 ft.  
An electric repair shop of brick, 30 ft. by 40 ft.  
Three ash hoists of concrete and steel.  
Two concrete inspection pits 100 ft. long.  
Two engine washing platforms, one a two-track platform.  
An electric welding shop, 20 ft. by 30 ft.  
An electric motor repair house, 110 ft. by 150 ft.  
A pipe and tin shop, carpenter shop and stoker room, 25 ft. by 100 ft.  
Track scales of 200 tons' capacity.  
An icing station with a double platform 400 ft. long; a crusher house 48 ft. long; a platform 185 ft. long and an ice storage house 125 ft. long.

In addition, 11 stalls are being added to the existing roundhouse to take care of repairs to heavier locomotives with 16,000 gal. tanks which have been used since the completion of the second track on the Big Sandy Line. This work involves an expenditure estimated at more than \$69,000. These additional facilities have been found necessary because of the large increase in west-bound traffic, particularly coal from the fields of West Virginia and Virginia. A contract for grading has been awarded to Harry Waugh, Bluefield, W. Va.

## Railway Financial News

**ALABAMA GREAT SOUTHERN.—Bonds.**—The Interstate Commerce Commission has authorized this company to procure the authentication and delivery of not exceeding \$500,000 first consolidated mortgage 5 per cent gold bonds, series A, to be held by the company until further order of the commission.

**BOSTON & MAINE.—Abandonment Hearings.**—Hearings were started by the Massachusetts Department of Public Utilities on December 10 on the petition of the Boston & Maine to abandon four additional branch lines totaling 24 miles in length. In this proceeding the state department is acting in co-operation with the Interstate Commerce Commission. Dwight S. Brigham, assistant general manager of the railroad, testified that on the 24 miles of railroad involved, the total revenue is \$48,900 a year and the expenses are \$123,700, resulting in an annual loss of \$74,800. The loss is spread over the four branches as follows:

Branch	Miles	Losses
Bedford-Billerica .....	8	\$29,900
Concord-Reformatory .....	7	23,100
Essex .....	6	17,500
Ashburnham .....	3	4,300
Total .....	24	\$74,800

**Abandonment of Kennebunkport Branch.**—The Maine Central Utilities Commission, acting in co-operation with the Interstate Commerce Commission, began hearings on December 15 with reference to the Boston & Maine's petition to abandon its Kennebunkport branch upon which the company reports an annual loss of \$25,000. The company estimates the revenue from the line to be \$6,100 annually and its taxes alone to be \$7,900.

**CENTRAL INDIANA.—Abandonment.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its entire line from Muncie to Waveland Junction, Ind., with branches making a total of 117 miles.

**CHESAPEAKE & OHIO.—Equipment Trust.**—The Interstate Commerce Commission has authorized the issuance of \$4,920,000 4½ per cent equipment trust certificates, series W, to be sold at not less than 96.89 per cent of par. The equipment includes 75 locomotives, 13 passenger train cars, 100 caboose cars, two ditchers, 4 air-operated dump cars and two locomotive cranes, having a total estimated net cost of \$6,220,764.

**DENVER & RIO GRANDE WESTERN.—Abandonment.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its Crestone narrow-gauge branch running 16.96 miles from a connection with the D. & R. G. W. at Moffat, Colo.

**FEDERAL VALLEY.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$392,240 as of June 30, 1922.

**FRANKFORT & CINCINNATI.—Abandonment Proceedings.**—The Interstate Commerce Commission has vacated an order entered on November 7, reopening the proceedings on the abandonment of this company's line, the reason being that on November 7 the company went into the hands of receivers. The application to abandon the line must now be made by the latter.

**FRANKLIN & PITTSYLVANIA.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$328,308 as of June 30, 1916.

**GIDEON & NORTH ISLAND.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$108,600 as of June 30, 1917.

**HAMPTON & BRANCHVILLE.—Securities.**—This company, which was recently authorized by the Interstate Commerce Commission to operate a line from Smoaks, S. C., to a point approximately 5 miles east and to construct an extension to Cottageville, has been

authorized to issue \$100,000 common stock, and \$100,000 general mortgage 6 per cent 20-year serial bonds, the securities to be delivered to the owners of the railroad at par for cash and the proceeds used for construction and equipment.

**HARTWELL.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$122,860 as of June 30, 1916.

**HEALDTON & SANTA FE.—Acquisition.**—This company has applied to the Interstate Commerce Commission for authority to issue \$50,000 of stock to be used in acquiring the property of the Oklahoma, New Mexico & Pacific and the Oil Fields Railway.

**ILLINOIS CENTRAL.—Equipment Trust.**—The Interstate Commerce Commission has authorized the issuance of \$9,240,000 4½ per cent equipment trust certificates, series L, to be sold at not less than 97 per cent of par to Kuhn, Loeb & Co. The equipment includes 1,400 freight cars and 215 suburban passenger cars, having a total approximate cost of \$11,556,500.

**INDIANA NORTHERN.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$29,310 as of June 30, 1916.

**INTERNATIONAL-GREAT NORTHERN.—Equipment Trust.**—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,920,000 of 4½ per cent equipment trust certificates to be sold to Kuhn, Loeb & Co., at 96¼.

**JACKSON & EASTERN.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$140,000 as of June 30, 1917.

**JACKSONVILLE & HAVANA.—Securities.**—This company has applied to the Interstate Commerce Commission for authority to issue \$300,000 of first mortgage bonds, \$300,000 of 6 per cent preferred stock, and \$25,000 of common stock, for the purpose of purchasing part of the line of the Chicago, Peoria & St. Louis from Jacksonville to Havana, Ill., 41.8 miles.

**LONGVIEW, PORTLAND & NORTHERN.—Notes.**—This company has been authorized to issue promissory notes aggregating \$68,437 in connection with the purchase of 50 logging cars of a total approximate cost of \$91,250.

**MOBILE & OHIO.—Equipment Trust.**—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,200,000 of 4½ per cent equipment trust certificates, sold to Clark, Dodge & Co., at 97.

**NACOGDOCHES & SOUTHEASTERN.—Acquisition.**—This company has applied to the Interstate Commerce Commission for authority to acquire and operate a line from Oil Springs, Tex., to Calcarey, 24 miles.

**NATCHEZ, COLUMBIA & MOBILE.—Final Value.**—The Interstate Commerce Commission has found the final value for rate-making purposes of the property owned and used for common-carrier purposes to be \$389,436 as of June 30, 1916.

**NEW ORLEANS, TEXAS & MEXICO.—Equipment Trust.**—This company has applied to the Interstate Commerce Commission for authority for an issue of \$750,000 of 4½ per cent equipment trust certificates to be sold to Kuhn, Loeb & Co., at 96¼.

**PANHANDLE & SANTA FE.—Acquisition.**—This company has applied to the Interstate Commerce Commission for authority to acquire control by lease of the South Plains & Santa Fe.

**PENNSYLVANIA.—Merger of Subsidiary Lines.**—The Interstate Commerce Commission has issued a certificate authorizing the Pennsylvania, Ohio & Detroit to acquire and operate the Manufacturers Railway Company (of Toledo) and to acquire the lines of the Cincinnati, Lebanon & Northern, the Cleveland, Akron & Cincinnati, the Toledo, Columbus & Ohio River and the Pennsylvania-Detroit, the latter four of which are at present operated by the Pennsylvania as lessee. All of the stock of these latter four roads, except directors' qualifying shares, is owned by the Pennsylvania, and all the outstanding capital stock of the Manufacturers Railway is owned by the Toledo, Columbus & Ohio

River. The commission has also granted authority to the Pennsylvania, Ohio & Detroit to issue \$28,410,000 capital stock in exchange for all the outstanding capital stock of the five constituent companies. The commission has also approved the acquisition by the Pennsylvania of control of the Pennsylvania, Ohio & Detroit by accepting the latter's capital stock in exchange for the stock of the constituent companies. These steps are in accordance with the Pennsylvania's plan to merge its subsidiary companies to facilitate efficiency of operation and to effect savings in accounting expenses.

**PITTSBURGH & WEST VIRGINIA.—Stock.**—This company has applied to the Interstate Commerce Commission for authority to issue preferred and common stock to the amount of \$30,235,000, to be exchanged for the common stock now outstanding on a basis outlined in the application. It is proposed to change the par value of the common stock from \$100 to \$50 and to provide that of a total stock issue of \$39,600,000, not more than \$15,200,000 shall be issuable as preferred stock and not more than \$24,400,000 as common.

**SOUTHERN RAILWAY.—Dividend Increase.**—Directors, meeting in New York on December 11, increased the rate on the common stock from 5 per cent to 7 per cent annually. The 5 per cent rate has been paid only since May 1, 1924, prior to which time no common dividends had been paid since the organization of the company in 1894. President Fairfax Harrison, in commenting on the dividend increase, said:

"This is only an event to which we have been working for several years, and the outlook is such that Southern Railway can look to a steady improvement in its revenues."

"The present boom in Florida has aided considerably in boosting our traffic improvement over last year, especially through the Cincinnati gateway, and we expect this condition to continue for at least six months. Passenger business from the West to Florida has also been an aid to picking up some of the loss we have had on local passenger business."

**TOLEDO, PEORIA & WESTERN.—Foreclosure Sale.**—No offers for the properties of this company were received at the foreclosure sale scheduled to be held on December 10 under the direction of Edward P. Allen, special master. No announcement was made regarding plans for a future sale.

**WISCASSET, WATERVILLE & FARMINGTON TAKEN OVER BY COMMUNITIES SERVED.**—This 2 ft. gage Maine railroad, 43 miles long, which its owners had decided to abandon, has been saved by the energetic action of the citizens of Wiscasset, who, according to a press dispatch of December 9, have succeeded in raising the \$50,000 required to purchase control of the property. Final subscriptions were obtained at and following a public meeting held on Wednesday. The road, according to the Official Guide, runs one train each way, each week day. The line extends northward from Wiscasset up the valley of the Sheepscot River.

**YALE SHORT LINE.—Acquisition.**—This company has applied to the Interstate Commerce Commission for authority to acquire and operate part of the line of the Sidell & Olney between Casey and Yale, Ill., 12.52 miles.

### Dividends Declared

Allegheny & Western.—3 per cent, payable January 2 to holders of record December 21.  
Baltimore & Ohio.—Common, 1¼ per cent, quarterly; preferred, 1 per cent, quarterly, both payable March 1 to holders of record January 16.  
Chicago, Indianapolis & Louisville.—Common, 2½ per cent; preferred, 2 per cent, both payable January 11 to holders of record December 26.  
Forda, Johnstown & Gloversville.—Preferred, 1½ per cent, quarterly, payable December 15 to holders of record December 10.  
Mahoning Coal Railroad.—Common, \$12.50, payable February 1 to holders of record January 25. Preferred, \$1.25, payable January 2 to holders of record December 23.  
Manhattan Ry.—27c., modified quarterly, payable January 2 to holders of record December 18.  
New Orleans & Northeastern.—Extra, 3 per cent, payable December 21 to holders of record December 14.  
New York & Harlem.—Common and preferred, \$1.25, payable January 2 to holders of record December 15.  
Southern Railway.—Common, 1¼ per cent, quarterly, payable February 1 to holders of record January 9. Preferred, 1¼ per cent, quarterly, payable January 15 to holders of record January 2.

### Trend of Railway Stock and Bond Prices

	Dec. 15	Last Week	Last Year
Average price of 20 representative railway stocks .....	98.13	94.80	80.47
Average price of 20 representative railway bonds .....	94.91	93.42	89.06



## Railway Officers

### Operating

**C. M. Dukes**, assistant to the general manager of the Chicago, Milwaukee & St. Paul, Eastern lines, has been promoted to assistant to the chief operating officer, with the same headquarters, a newly created position.

**C. L. Walden** has been appointed passenger trainmaster of the East Florida division of the Seaboard Air Line, with headquarters at West Palm Beach, Fla. **R. M. Benton** has been appointed assistant trainmaster of the Central Florida division, with headquarters at Tampa, Fla.

**Colonel A. H. Egan**, general superintendent of the Yazoo & Mississippi Valley lines of the Illinois Central, with headquarters at Memphis, Tenn., will retire from active service effective

January 1, under the new pension rule of the company, having reached the age of 70 years. **F. R. Mays**, superintendent of the Illinois division, with headquarters at Champaign, Ill., has been promoted to general superintendent of the Yazoo & Mississippi Valley, in place of Colonel Egan. **T. J. Quigley**, superintendent of the Louisiana division, with headquarters at McComb, Miss., has been transferred to the Illinois division, succeeding Mr. Mays. **E. L. McLaurine**, trainmaster of the Tennessee division, with headquarters at Fulton, Ky., has been promoted to superintendent of the Louisiana division, in place of Mr. Quigley. Colonel Egan was born on January 27, 1855, at Amboy, Ill., and entered railway service in September, 1872, as an apprentice on the Illinois Central. He was in the service of the Chicago, Milwaukee & St. Paul from 1880 to 1882, of the Canadian Pacific from 1883 to 1885, and of the Union Pacific from 1885 to 1888. He returned to the Illinois Central as division superintendent in 1891, and was promoted to general superintendent of the Yazoo & Mississippi Valley in April, 1913, where he remained until his retirement. Mr. Mays was born on August 28, 1879, at Crockett, Va., and entered railway service in August, 1895, as a machinist apprentice on the Norfolk & Western, being later promoted to machinist. He entered the service of the Illinois Central as a machinist on the Yazoo & Mississippi Valley in July, 1901, and was transferred to train service as a locomotive fireman in October of the same year. He was promoted locomotive engineer in November, 1903, and was promoted to instructor on transportation rules in May, 1907. In September of that year Mr. Mays was promoted to traveling engineer and he held that position for one year, being promoted to assistant trainmaster in October, 1912. He was promoted to trainmaster in December, 1913, and was promoted to superintendent of the New Orleans division in August, 1917. He was transferred to the Illinois division in March, 1923, where he remained until his recent promotion to general superintendent.

**T. J. Jelbart**, trainmaster of the Renovo division of the Pennsylvania, with headquarters at Erie, Pa., has been transferred to the Buffalo division, with headquarters at Buffalo, N. Y., succeeding **J. F. Richards**, assigned to other duties. **H. A. Hobson**, assistant trainmaster of the Eastern division, has been



F. R. Mays

promoted to trainmaster of the Renovo division, in place of Mr. Jelbart.

**W. H. Newell, Jr.**, has been appointed superintendent of the Lakeland district of the Atlantic Coast Line, with headquarters at Lakeland, Fla., succeeding **J. F. Council**, who has been relieved on account of ill health. **Lloyd Crocker** has been appointed superintendent, with headquarters at Wilmington, N. C., succeeding Mr. Newell. **R. W. Farmer** has been appointed trainmaster at Wilmington succeeding Mr. Crocker. **Max Hair** has been appointed acting superintendent of terminals at Jacksonville, Fla., succeeding **T. W. Hansell**, who has been granted a leave of absence. **C. L. Burpee** has been appointed acting terminal trainmaster at Jacksonville, succeeding Mr. Hair. **J. B. McLeod** has been appointed assistant trainmaster, with headquarters at Haines City, Fla., with jurisdiction over the line between Haines City and Clewiston, Tampa district. **W. H. Torrible** has been appointed passenger trainmaster, with jurisdiction over the Jacksonville and Tampa districts, headquarters, Jacksonville, Fla. **Hoyt Ware** has been appointed passenger terminal trainmaster, with the same headquarters.

**J. F. Council**, superintendent of the Lakeland district of the Atlantic Coast Line, with headquarters at Lakeland, Fla., has retired. Mr. Council was born on March 4, 1869, at Reevesville, S. C., and was educated in the public schools. He became connected with the Atlantic Coast Line as a trainman on December 1, 1890. He served as conductor on the Charleston division for five years, and then became yardmaster at the Charleston terminal. Four years later he was appointed trainmaster at the same place and after three years returned to the road as a passenger conductor between Savannah and Florence. During this time he also did special work and after eighteen months became trainmaster at Wilmington, N. C. Later he was transferred to the Norfolk division and there became superintendent. On December 6, 1906, Mr. Council was transferred to Lakeland in the same capacity, which position he was holding at the time of his retirement.

### Traffic

**R. Menendez** has been appointed general agent of the Southern Pacific, with headquarters at Havana, Cuba, succeeding **F. M. Giral**, who has resigned.

**C. H. Wilson** has been appointed assistant general freight agent of the Southern Pacific lines in Texas, with headquarters at Houston, Tex., succeeding **J. R. Houston**.

**J. R. Van Delinder** has been appointed assistant general freight agent of the Chicago, Indianapolis & Louisville, with headquarters at Chicago, a newly created position.

**A. E. Buck** and **A. C. Jackson** have been appointed assistant land and industrial commissioners of the Gulf Coast Lines and the International-Great Northern, with headquarters at Houston, Tex. These are newly created positions.

**J. G. Morrison**, assistant general freight agent of the Northern Pacific, with headquarters at St. Paul, Minn., has been promoted to general freight agent, with the same headquarters, succeeding **C. R. Lonergan**, who has been assigned to other duties.

**J. W. Gardner**, division passenger agent of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Indianapolis, Ind., has been promoted to assistant general passenger agent, with headquarters at St. Louis, Mo., succeeding **R. C. Kennedy**, resigned, to become general manager of the Louisville Post and the Louisville Herald.

**F. P. Sackbauer**, assistant general freight and passenger agent of the Missouri-Illinois, with headquarters at St. Louis, Mo., has been promoted to general freight and passenger agent, with the same headquarters, a newly created position. **R. W. LaTourette** has been appointed assistant general freight and passenger agent in place of Mr. Sackbauer.

**Col. Arthur N. Payne**, at present transportation manager of the Associated Industries of Massachusetts, will join the staff of the vice-president in charge of traffic of the Boston &

Maine on January 1 to promote closer contact between the railroad and its shippers. Col. Payne was for many years in the service of the Boston & Maine as station agent at Milford, N. H., Marlboro and North Adams; and as traveling agent. As a member of the New Hampshire and Massachusetts National Guard, he was active in military affairs for years, and in war-time spent 21 months overseas with the Yankee division. Entering the federal service as captain, he was discharged as lieutenant-colonel, and subsequently became colonel commanding the 376th Regiment of Infantry Organized Reserves.

**J. Francis**, general passenger agent of the Illinois and Iowa districts of the Chicago, Burlington & Quincy, with headquarters at Chicago, will retire, effective January 1, after 44 years of railway service. **A. Cotsworth, Jr.**, general passenger agent of the lines west, with headquarters at Omaha, Neb., has been transferred to the Illinois and Iowa districts, in place of Mr. Francis. **C. J. Rohwitz**, general passenger agent of the Missouri district, with headquarters at St. Louis, Mo., has been transferred to the lines west, succeeding Mr. Cotsworth. **T. P. Hinchcliff**, assistant general passenger agent of the Illinois and Iowa districts, with headquarters at Chicago, has been promoted to general passenger agent of the Missouri district, succeeding Mr. Rohwitz. **William Tanzer**, chief clerk in the passenger traffic department at Chicago, has been promoted to assistant general passenger agent of the Illinois and Iowa districts, with the same headquarters, in place of Mr. Hinchcliff.

**Joseph A. Fisher**, chief clerk to the vice-president in charge of freight traffic of the Reading, has been appointed foreign freight agent, a newly created position. His headquarters will be at Philadelphia. In line with the policy of the company to increase the volume of its business in the Port of Philadelphia, Mr. Fisher will assume full charge of the import and export, coastal and inter-coastal shipments. He will have his headquarters at the Reading terminal. Mr. Fisher was born in 1895, and was graduated from Lehigh University as a civil engineer in 1917. He became associated with the Reading on October 1, 1921, as a special agent. In June, 1922, he became freight traffic representative, and in January, 1925, became chief clerk to the vice-president in charge of freight traffic, which position he was holding at the time of his recent appointment to foreign freight agent.



J. A. Fisher

**Albert C. McIntyre** has been appointed general freight agent of the Lehigh Valley, with headquarters at New York. Mr. McIntyre was born on December 31, 1888, at Hyde Park, Boston, Mass., and attended the local grammar and high schools. He entered railway service in 1903 as a clerk in a local station of the New York, New Haven & Hartford at Boston. He was later transferred to the general freight office and remained there as rate clerk until 1910 when he went with the Lehigh Valley as a clerk in the office of its New England freight agent at Boston. In 1915 he was appointed soliciting freight agent at Boston and shortly thereafter was transferred to Chicago in the same capacity. In 1917 he went to Toledo, O., as commercial agent and remained there until the office was closed under federal control when he was transferred to the office of the assistant general freight agent at Buffalo, N. Y. Later on in 1918 he went to New York as chief clerk to the general freight agent. On January 1, 1920, he was appointed city freight agent at New York and on July 15 of the same year became assistant to the traffic manager. In

1921 he was appointed assistant general freight agent, which position he held until the time of his recent promotion.

## Obituary

**John R. Booth**, the lumberman and railroad builder of the Upper Ottawa, died in the Canadian capital last week. What was for years known as the Canada Atlantic Railway, running from Montreal to Parry sound, on Georgian bay and through Ottawa, was completed by Mr. Booth. When the road was under construction in 1878 and when its promoters were experiencing serious financial difficulties Mr. Booth went to their assistance and finished about 500 miles. After practically building the line, he built grain elevators on Georgian bay and other points, purchased steamships and then bought wheat and other freight for the line. In 1904 the Canada Atlantic was sold to the Grand Trunk, which later in 1919 became a part of the Canadian National.

**Alexander M. Parker**, general superintendent of the Eastern Pennsylvania division of the Pennsylvania, died suddenly of apoplexy at his home in Harrisburg, Pa., on December 10. Mr. Parker was born on June 25, 1870, in Carlisle, Pa., and was educated at Dickinson College. Following several years' service with the construction department of the Pennsylvania in connection with various surveys in central and western Pennsylvania, he was transferred, in 1891, to the assistant engineer's office, Philadelphia division. Later he served in the office of the principal assistant engineer at Altoona, and was appointed assistant supervisor of the Philadelphia division at Lancaster in 1892. As an assistant supervisor he was transferred to the Philadelphia division at Lancaster in 1892. As an assistant supervisor, he was transferred to the Philadelphia yards in 1896, and was appointed supervisor at Tyrone in 1897. He subsequently served in the same capacity on the Frederick, Schuylkill and New York divisions. In 1903 he was appointed assistant to the principal assistant engineer, at Jersey City, and, in 1905, became principal assistant engineer. Upon the organization of the Hudson division at New York, in 1909, he was appointed superintendent, and on January 1, 1912, was transferred to superintendent of the Allegheny division, with headquarters at Oil City, Pa. Mr. Parker was transferred as superintendent to the Camden terminal and West Jersey & Seashore on September 20, 1917. He was superintendent of the Philadelphia terminal division four years before he was promoted to the position of general superintendent of the Eastern Pennsylvania division.



Alexander M. Parker

**William H. Beardsley**, president of the Florida East Coast, died on December 13, at his home in New York after an illness of two weeks. Mr. Beardsley was born on April 7, 1852, at Cleveland, Ohio, and was educated in the public schools and the Central High School of Cleveland. He entered railway service in 1881, as a stenographer with the Richmond & Danville (now Southern) at New York, and in January, 1882, became private secretary to H. M. Flagler, builder of the Florida East Coast. From 1889 to December, 1895, he was assistant to Mr. Flagler, at that time president of the Jacksonville, St. Augustine & Indian River and its successor, the Florida East Coast. From December 17, 1895, to March 17, 1914, he was treasurer of the Florida East Coast, and from April 7, 1910, to March 17, 1914, he was also vice-president. On the latter date he became president of that road. Mr. Beardsley was 73 years of age at the time of his death.